HEALTH CARE FINANCING ADMINISTRATION

SUMMARY REPORT TO CONGRESS

Monitoring the Impact of Medicare Physician Payment Reform on Utilization and Access

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Summary Report to Congress

Monitoring the Impact of Medicare Physician Payment Reform on Utilization and Access

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BACKGROUND

This is the fifth annual report submitted to Congress in response to the Omnibus Budget Reconciliation Act of 1989 (Public Law 101–239), which amended the Social Security Act by adding Section 1848, "Payments for Physicians' Services."

The major intent of this legislation was to provide more rational and equitable payment for physicians' services provided under Medicare. The Medicare fee schedule (MFS) led to a shift of Medicare payments from procedural services to evaluation and management services and from urban areas to rural areas.

Section 1848(g)(7) requires the Secretary of the Department of Health and Human Services to monitor and report annually to Congress on changes in utilization and access, by population groups, geographic areas, and types of services and on possible sources of inappropriate use.

THE 1995 REPORT

For the 1995 report, the Health Care Financing Administration (HCFA) updated (or expanded) each of the 1994 analyses. In addition, new analyses are reported that explore the effect of socioeconomic status (SES) on utilization patterns. To analyze the effect of SES, area-wide income data on the zip code level obtained from the 1990 U.S. Census were linked to person-level Medicare data. The linked data were used to study utilization patterns and access to care across income groupings.

This report is divided into two major parts. Part I summarizes the new analyses of the effect of income on access to care. Part II summarizes the updated studies.

SIX MAJOR POLICY ISSUES ADDRESSED

This report addresses six policy issues:

- To what extent does health status—as measured by mortality rates—vary by race and income?
- To what extent does utilization of Medicare services vary by race and income?
- To what extent does standardization of income between Black and White Medicare population groups reduce racial differences in mortality and utilization?
- Did the MFS invoke the kinds of payment changes anticipated?
- Did payment reform present new barriers for vulnerable population groups?
- What have been the impacts of the MFS on physicians' practices?

HIGHLIGHTS

PART I

- There are very substantial differences in the income distributions of Medicare beneficiaries across races. Twenty-seven percent of all White beneficiaries fell into the highest income quartile but only 6 percent of all Black beneficiaries fell into the highest income quartile. In contrast, 19 percent of all White beneficiaries fell into the lowest income quartile while 73 percent of all Black beneficiaries fell into the lowest income quartile.

- The higher mortality rates for Black beneficiaries compared to White beneficiaries indicate that health status is lower among Black beneficiaries.

- For Black beneficiaries the ambulatory physician visit rate is lower than for White beneficiaries; in contrast, for Black beneficiaries the total hospitalization rate was higher than the rate for White beneficiaries. These utilization patterns suggest that Black beneficiaries may experience more barriers to comprehensive and continuous care than White beneficiaries.

- For many common procedures, such as coronary artery bypass graft (CABG), percutaneous transluminal coronary angioplasty (PTCA), and knee and hip replacements, utilization rates are higher for White beneficiaries than for Black beneficiaries, suggesting that Black beneficiaries are at risk of experiencing barriers to several referral-sensitive procedures.

- The most important new knowledge gained from these analyses is that lower SES, in and of itself, is also a risk factor for all Medicare population groups, including White beneficiaries. The new analyses showed that:

  - The rate of ambulatory physician visits declined 18 percent for White beneficiaries and 12 percent for Black beneficiaries as income declined.

  - Among Black beneficiaries in the lowest income group, rates of referral-sensitive procedures such as PTCA were 24 percent lower than the rates for Black beneficiaries in the highest income quartile. The corresponding difference for CABG was 16 percent.

  - Among White beneficiaries in the lowest income quartile, the rate of hospitalization for hypertension was more than twice as high as the rate for beneficiaries in the highest income quartile.

  - The rate of bilateral orchiectomy was 43 percent greater for the least affluent White males than for the most affluent White males.

- Standardization of income across races showed that if the income distributions for Black beneficiaries and White beneficiaries were equal, the racial differences in utilization rates for many services would decrease, although generally by only a modest amount. But, for some services, such as ambulatory physician visits, magnetic resonance imaging (MRI), and mammography, the standardization of income diminished appreciably the disparities by race—indicating that low income among Black beneficiaries plays a substantial role with regard to access to care for certain services.

The important results from the studies performed for the 1994 report held true in the updated analyses. Three major conclusions in 1994 can again be reported in 1995:

- The MFS has produced the kinds of shifts in payments that were anticipated.
- For the vulnerable populations studied, no new barriers to care were found. However, there are continuing indications that many population groups face barriers to care.
- Additional understanding is needed of barriers to care for vulnerable populations to further improve their access to care.

FUTURE WORK

HCFA intends to expand its monitoring and analyses of access to care along three lines:

- The SES studies will be refined by using multi-variate techniques that include additional SES variables from the U.S. Census, such as educational attainment.
- The SES analyses will be refined by using the census tract as the unit of aggregation instead of the zip code. The feasibility of this effort depends upon the ability in HCFA to map current beneficiary residence information into census tract designations.
- The current monitoring system will be improved to monitor additional indicators. For example, HCFA intends to monitor the use of all preventive services and hospitalizations for referral-sensitive conditions.

Glossary

AARP	American Association of Retired Persons
AHCPR	Agency for Health Care Policy and Research
ACS	Ambulatory Care Sensitive
BETOS	Berenson-Eggers Type of Service
CABG	Coronary Artery Bypass Graft
CHER	Center for Health Economics Research
CPT	Current Procedural Terminology
HCFA	Health Care Financing Administration
HCPCS	HCFA Common Procedure Coding System
HCQIP	Health Care Quality Improvement Program
HMO	Health Maintenance Organization
HPSA	Health Professional Shortage Areas
MAAC	Maximum Allowable Actual Charge
MCBS	Medicare Current Beneficiary Survey
MEDTEP	Medical Treatment and Effectiveness Program
MFS	Medicare Fee Schedule
MPIES	Medicare Physician Identification and Eligibility System
MVPS	Medicare Volume Performance Standards
NCH	National Claims History
NHIS	National Health Interview Survey
OBRA	Omnibus Budget Reconciliation Act
PORT	Patient Outcomes Research Teams
PPRC	Physician Payment Review Commission
PRO	Peer Review Organization
PTCA	Percutaneous Transluminal Coronary Angioplasty
UCDSS	Uniform Clinical Data Set System
UPIN	Unique Physician Identifier Number

THE 1995 ACCESS REPORT TO CONGRESS

INTRODUCTION

This 1995 *Report to Congress* is the Secretary's fifth annual report submitted in response to the requirements of the Omnibus Budget Reconciliation Act of 1989 (OBRA '89) to monitor and report annually the impact of changes in Medicare physician payment on access to care.

OBRA '89 introduced significant changes in Medicare physician payment policy. The three major components of the law were (1) the introduction of a Medicare fee schedule (MFS), which was implemented beginning January 1, 1992 under a transition period ending in 1996; (2) the establishment of limits on physicians' charges exceeding the fee schedule amount; and (3) the institution of target rates of growth in expenditures for physicians' services. The intent of these changes is to provide more rational and equitable payment for physicians' services provided under the Medicare program.

Section 1848(g)(7) of the Social Security Act requires the Secretary of the Department of Health and Human Services to monitor and report annually to Congress on changes in utilization and access, by population groups, geographic areas, and types of service and on possible sources of inappropriate utilization.

Payment reform is part of a continuum. Before the OBRA 1989 reforms were instituted, a number of significant changes were initiated in physician payment policy that affected, and will continue to affect, utilization and access.[1] Many other forces are also likely to continue to influence the demand for and supply of physicians' services received by Medicare beneficiaries, including the diffusion of new technology into the health delivery system. It is important, therefore, to view any changes found in access, utilization, and appropriateness in light of the many factors that may influence the health care system in general and Medicare in particular.

PREVIOUS REPORTS

The Health Care Financing Administration (HCFA) has taken a broad and varied approach to monitoring access to care. The 1994 *Report to Congress* summarized the results of eight studies. These studies drew on a number of measures of access to care in order to gain differing perspectives. The principal sources of data were the Medicare Part B monitoring system, Part A data, and two national surveys.

Several vulnerable population groups that are identifiable in these data sources were selected for monitoring. These include beneficiaries who are living under the poverty level; dually eligible for Medicare and Medicaid; Black; disabled and under age 65 years of age; very old (i.e., age 85 and older); without supplemental health insurance; residing in rural areas; residing in areas designated as health professional shortage areas; and residing in areas expected to experience the greatest decreases in average Medicare fees.

The 1994 report showed that the introduction of the MFS produced the kinds of shifts in payments that were anticipated. In particular, there was a relative increase in allowed charges for visits and consultations and a relative decrease in allowed charges for procedure-based services. The report also showed that the introduction of the new

[1]These include the implementation in 1975 of the Medicare Economic Index as a limit on increases in prevailing charges; the initiation in 1984 of the participating physician program to provide incentives for physicians to accept assignment; the introduction in 1987 of the Maximum Allowable Actual Charge (MAAC) limits which restricted the amount non-participating physicians could charge; the reductions in prevailing charges for overpriced procedures instituted for one group of procedures in 1988 and for another in 1990; and the institution of fee schedules for radiology in 1989 and anesthesiology in 1990.

payment system for physicians produced no new barriers to care for the vulnerable populations studied, although there were clear indications that many vulnerable groups under Medicare continue to face barriers to care.

The 1994 report concluded that effective monitoring of access to care requires the development of additional measures of access to care as well as better data sets and linkages to other information.

THE 1995 REPORT

Each of the 1994 analyses were updated (or expanded), and the findings are included in this report. It is important to note that the analyses were conducted by different researchers and were designed to provide varying perspectives on access to care for vulnerable populations. The researchers may have used different definitions, data sources, methodologies, and study populations. Therefore, there will be variations across studies in estimates, such as total counts and rates of use. In some instances, we were unable to explain discrepancies between estimates. In general, however, the relationships between vulnerable populations and measures of access were consistent throughout and confirmed that no new barriers resulted from the changes in physician payment policy.

Additionally, the large differences by race shown in the 1994 report stimulated a new series of analyses that explore the effect of income on utilization patterns. In particular, analyses were designed to examine the extent to which disparities between Black and White Medicare beneficiaries in procedures, such as coronary artery bypass surgery (CABG), are due to differences in socioeconomic status (SES). Three separate studies were designed to examine different aspects of the relationship between SES and access to care.

This report is divided into two parts:

- Part I. Summary of the Three New Studies
- Part II. Summary of the Updated Studies

Part I Summary of Three New Studies Examining the Relationship Between SES and Access to Care

BACKGROUND

Studies of the 1970s and 1980s that evaluated the impact of Medicare and Medicaid on the enrolled populations showed that these programs have gone a long way toward equalizing access to care (e.g., Long and Settle, 1984; Link et al., 1982; Davis, 1991; Ruther and Dobson, 1981). Moreover, the introduction of new payment policies in Medicare, such as the hospital prospective payment system and the physician fee schedule, has not had a detrimental impact on access to care.

However, the in-depth monitoring of Medicare services, from the period before the introduction of physician payment reform and continuing onward, has shown differences in the utilization experience of several vulnerable subgroups of the Medicare population. For example, Black beneficiaries have substantially lower rates of use of many procedures performed in the hospital, such as CABG and hip and knee replacement, that may reflect differences in access to these procedures. At the same time, Black beneficiaries have higher rates of certain procedures that are considered non-elective, such as bilateral orchiectomy (performed primarily for advanced stage prostate cancer) and excisional debridement (removal of tissue, usually related to decubitus ulcers). The need for these procedures may reflect delayed diagnosis or initial treatment or inadequate medical and/or follow-up care.

Differences by race in utilization patterns are likely to reflect, in part, differences in SES, which, in itself, is associated with health status. For example, ongoing surveys that assess the relationship between income and health status, such as the National Health Interview Survey and the Medicare Current Beneficiary Survey, have shown that persons living at or below the poverty level have significantly poorer levels of health than persons living above the poverty level.

In addition, differences in SES may also affect access to care. Providers, in some instances, may offer certain treatment options to higher income patients when there are associated costs. At the same time, beneficiaries with greater educational attainment may be more likely to know about newer medical treatments and be more likely to raise questions about treatment options with their physicians. Higher income beneficiaries are also likely to live in areas with greater access to health care resources and to have sufficient financial resources to cover deductibles and other cost-sharing requirements or to have additional insurance that covers the cost sharing.

For this report, several analyses were performed to understand the effects of SES on access to and utilization of services by White beneficiaries and Black beneficiaries. In particular, analyses were conducted to determine the extent to which standardization of income between White and Black beneficiaries would reduce differentials in mortality rates and in utilization of services.

APPROACH USED IN THE ANALYSES

To study the relationship between utilization of specific procedures, race, and SES, a very large, person-level database is needed that contains (1) such socioeconomic measures as income, education, or occupation and (2) utilization data. While major health care surveys collect information on SES variables, sample sizes are generally not large enough to monitor utilization patterns in any detail. The Medicare administrative database covers 37 million persons and contains sufficient information to monitor, in detail, patterns of utilization, but SES information is not included in the Medicare enrollment files. The only beneficiary information available is age, gender, race (currently, codes for White, Black, and other races are used) and State, county, and zip code of residence. To overcome this limitation and obtain a large enough data set with SES variables and utilization

information, HCFA linked information from the 1990 U.S. Census aggregated to the zip code level with person-level data from Medicare claims files, which contain utilization information for beneficiaries receiving services in the fee-for-service sector.

Clearly, person-level data would provide a more precise measure of income. Any proxy measure of income is likely to have limitations. However, the rationale for linking U.S. Census data with Medicare administrative data came from a study by N. Krieger (1992) entitled, *Overcoming the Absence of Socioeconomic Data in Medical Records: Validation and Application of a Census-based Methodology*. The study was designed specifically to test whether area-level data could be used in lieu of individual SES data. The results of analyses based on person-level data obtained from a large health maintenance organization (HMO) were compared with the results of analyses based on 1980 aggregate data for census tracts and block groups comprising that HMO. The study concluded that U.S. Census area-level data offer a valid and useful approach to overcoming the absence of individual SES data.

For this report, HCFA used median household income information at the zip code level from the 1990 U.S. Census and (1) "assigned" to each White Medicare beneficiary living in a specific zip code area the median income for White persons age 65 and older in that zip code area and (2) "assigned" to each Black beneficiary the median income for Black persons age 65 and older in that zip code area. All beneficiaries of both races were then combined and grouped into income quartiles; the lowest 25 percent of all beneficiaries had annual incomes of $13,100 or less, while the highest 25 percent of beneficiaries had incomes of $20,501 or more. A larger number of income breaks, such as quintiles, would have produced less stability in the data when the rates of less frequent procedures were being analyzed by race, gender, and income.

The new studies address three specific issues not addressed in previous HCFA analyses. For Medicare beneficiaries who are age 65 or older:

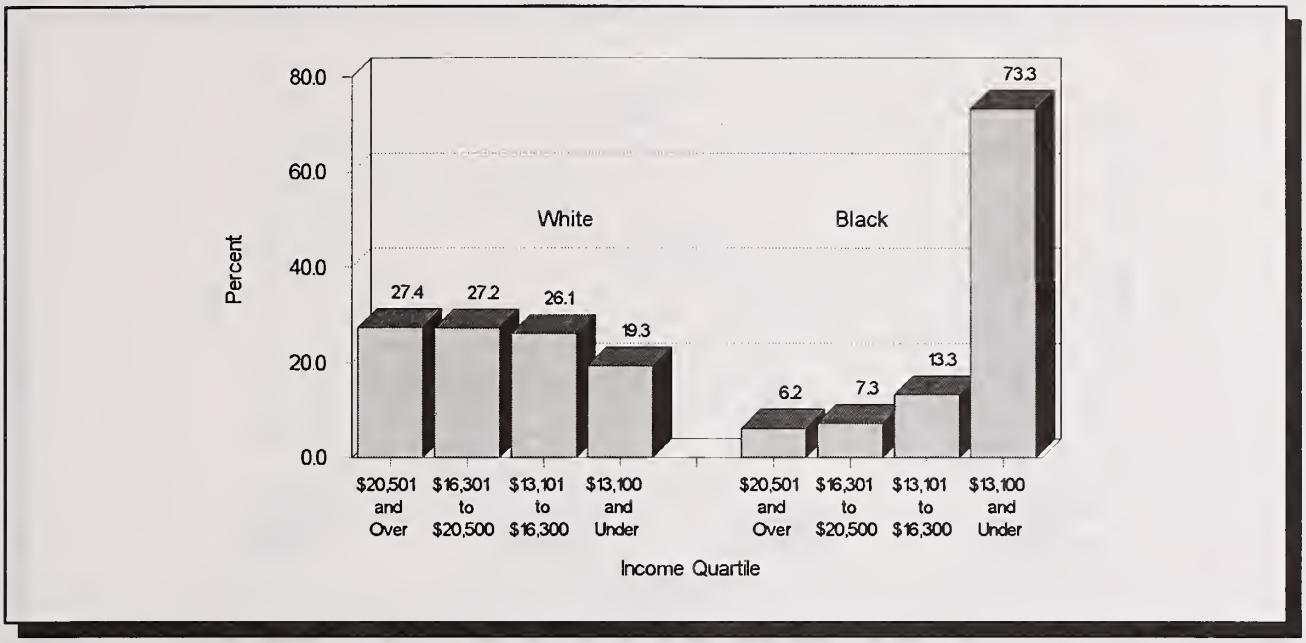
- To what extent does health status—as measured by mortality rates—vary by race and income?
- To what extent does utilization of Medicare services vary by race and income for:
  - ambulatory physician visits?
  - total hospitalizations?
  - heart and vascular disease hospitalizations?
  - procedures performed in the hospital?
- To what extent does standardization of income between Black and White Medicare population groups reduce racial differences in mortality and utilization?

Highlights of these studies follow.

MAJOR FINDINGS

Establishing four equal income groupings based on the entire Medicare aged population resulted in markedly different distributions by race. As shown in Figure 1, White beneficiaries are nearly evenly distributed across the four income quartiles, although only 19.3 percent fell into the lowest income quartile. In contrast, Black beneficiaries were very unevenly distributed; 73.3 percent fell into the lowest income quartile and only 6.2 percent fell into the highest income quartile. See Table 1 at the end of this report and References, Appendix I, for details.

Figure 1 Percent Distribution of Medicare Aged Population by Race and Income, 1993



SOURCE: Data derived from the 1993 Medicare Denominator File and 1990 U.S. Census of the Population.

QUESTION 1: TO WHAT EXTENT DOES HEALTH STATUS—AS MEASURED BY MORTALITY RATES—VARY BY RACE AND INCOME?

Figure 2 shows 1993 mortality rates for Medicare beneficiaries age 65 and older, by race, sex, and income. (Rates are age-adjusted.) Men of either race have higher mortality rates than women of either race. Black men have higher mortality rates than White men; similarly, Black women have higher mortality rates than White women. The overall age-adjusted mortality ratio (Black:White) was 1.18 for men and 1.16 for women. (That is, Black men had 18 percent higher mortality than White men; Black women had 16 percent higher mortality than White women.)

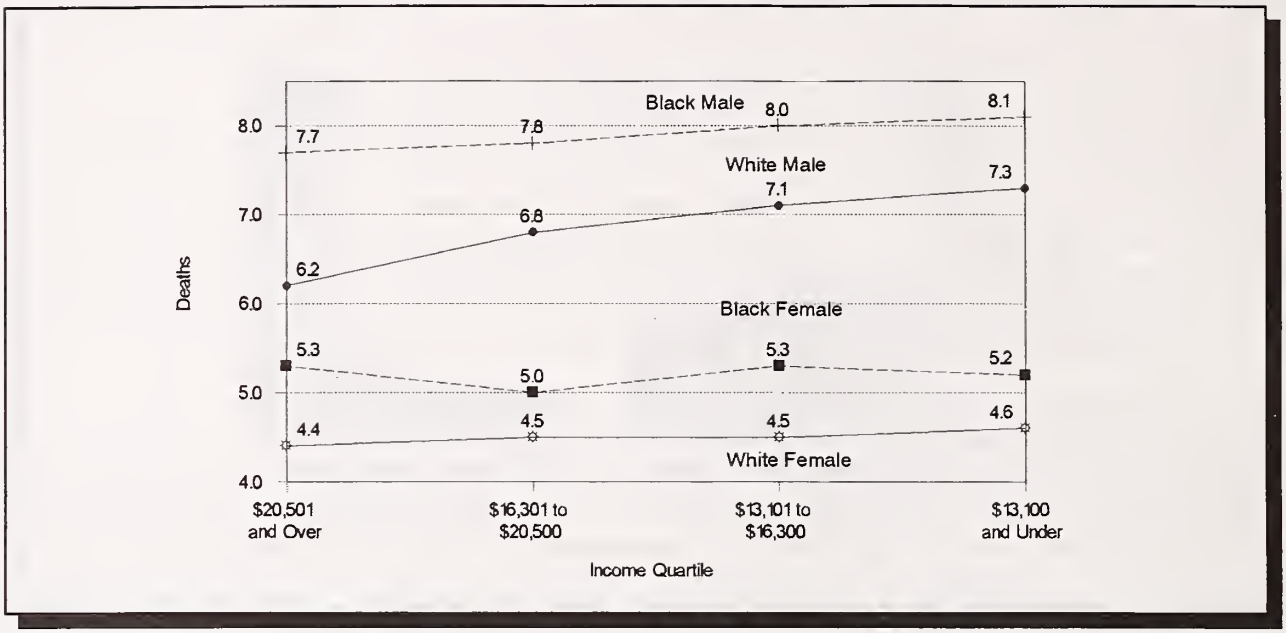
Income differentials. Except for Black women, beneficiaries in the lowest income quartiles had higher mortality rates than those in the highest income quartiles.

White men experienced the most marked differences by income; in the lowest income quartile ($13,100 or less annually in 1990), White men had a mortality rate that was 19 percent greater than White men in the highest income quartile ($20,501 and over). This means that the differential in mortality rates (19 percent) between the poorest White men and the most affluent White men was of a similar magnitude to the differential between the races (18 percent for men and 16 percent for women).

White women and Black men in the lowest income quartiles had a mortality rate that was only a little higher (about 5–6 percent) than the corresponding rate for that gender and race in the highest income quartile. For Black females, there was no consistent pattern across income quartiles. See Table 2 at the end of this report and References, Appendix I, for details on mortality rates.

In the data on mortality, discussed above, and in the data on utilization, which follows, an income effect tends to be more evident for White persons than for Black persons. Conjectures about why this may occur will be discussed at the end of this section.

Figure 2 Deaths per 100 Medicare Beneficiaries by Race, Sex and Income: Persons Age 65 and Older, 1993



NOTE: Mortality rates are age-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator File and 1990 U.S. Census of the Population.

QUESTION 2: TO WHAT EXTENT DOES UTILIZATION VARY BY RACE AND INCOME?

In the following discussions, utilization rates are analyzed in terms of variations by race and income.

Ambulatory Physician Visit Rates

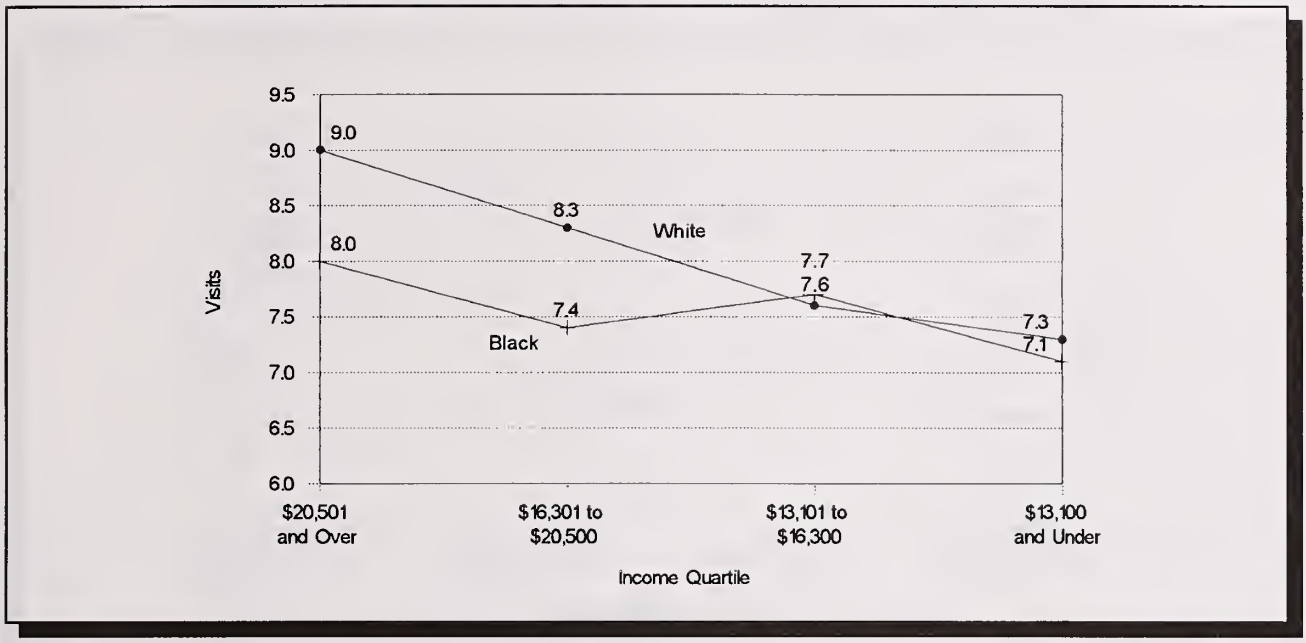
Figure 3(a) shows ambulatory physician visit rates for 1993.

- **Race**—The overall ambulatory visit rate was higher for White beneficiaries than for Black beneficiaries. In the two highest income quartiles, ambulatory visit rates were greater for White beneficiaries than for Black beneficiaries; however, in the two lowest income quartiles, ambulatory visit rates were similar for both races. Overall, the ratio (Black:White) of the ambulatory visit rates was 0.89. That is, the ambulatory visit rate for Black beneficiaries was 11 percent lower than the rate for White beneficiaries.

- **Income**—For each racial group, the ambulatory physician visit rates tended to decline as income declined; White beneficiaries in the lowest income quartile had ambulatory physician visit rates that were 18 percent less than those in the highest income quartile, while the corresponding differential for Black beneficiaries was 12 percent.

At the same time, the emergency room (ER) physician visit rate was 45 percent higher for Black beneficiaries than for White beneficiaries. Moreover, the ER visit rate tended to increase as income declined. However, for both Black beneficiaries and White beneficiaries, the rate of ER visits was low, representing only 5 percent of all ambulatory visits. See Table 3 and References, Appendix I, for details.

Figure 3a Ambulatory Visits per Person by Race and Income: Persons Age 65 Years and Older, 1993



NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator, National Claims History and MEDPar Files, and 1990 U.S. Census of the Population.

Overall Hospitalization Rates

Figure 3(b) shows hospitalization rates for 1993.

- **Race**—In contrast to the pattern observed for ambulatory physician visits, the overall hospitalization rate was 14 percent higher for Black beneficiaries than for White beneficiaries. That is, the Black:White ratio = 1.14.

- **Income**—For White beneficiaries, the rate of hospitalization increased markedly as income declined; for Black beneficiaries there was no consistent pattern by income.

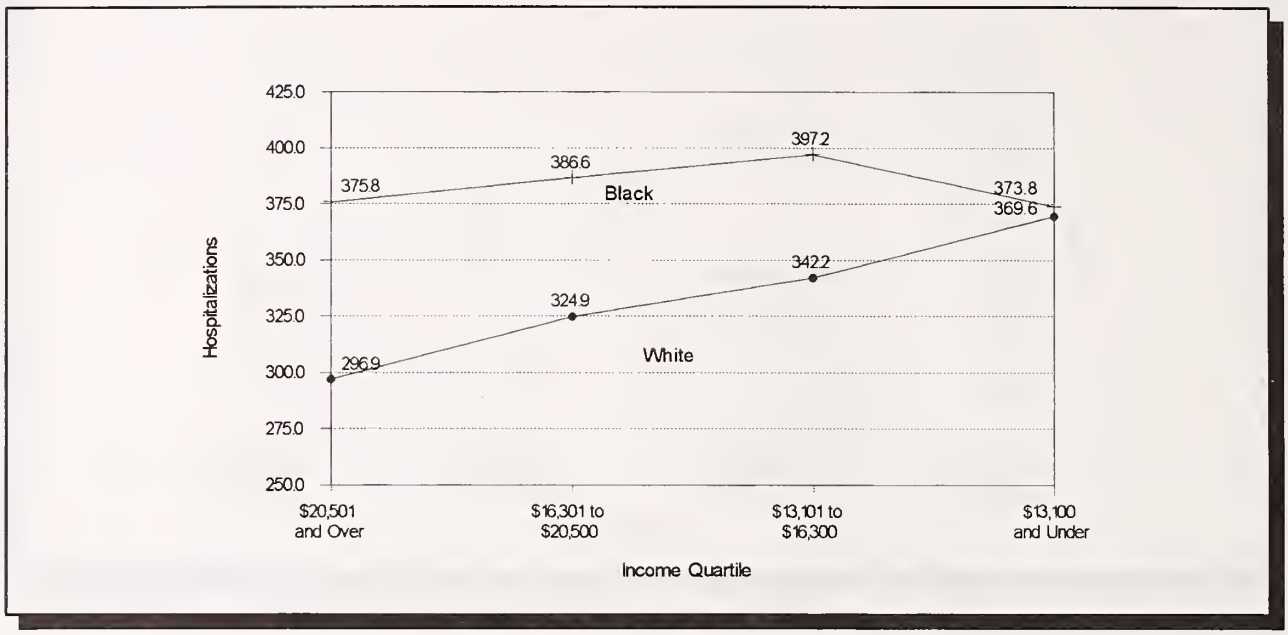
Hospitalization Rates for Heart Disease

Hospitalization rates in 1993 are shown for ischemic heart disease in Figure 4(a) and for congestive heart failure in Figure 4(b).

- **Race**—These two heart conditions exhibit different hospitalization patterns by race. The ischemic heart disease hospitalization rate was 26 percent higher for White beneficiaries than for Black beneficiaries (overall Black:White ratio = 0.74); in contrast, the congestive heart failure hospitalization rate was 37 percent higher for Black beneficiaries (overall Black:White ratio = 1.37).

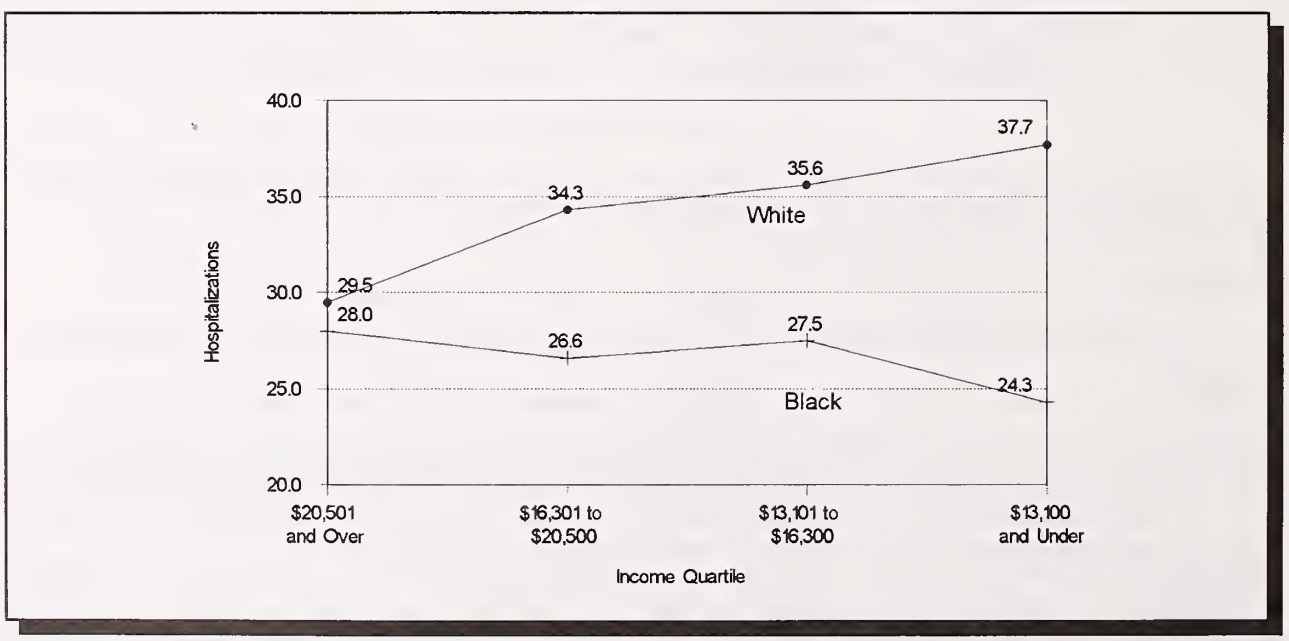
- **Income**—For White beneficiaries, hospitalization rates for both diagnoses increased as income declined. Compared to the highest income quartile, the rate for the lowest quartile was 28 percent greater for ischemic heart disease and 41 percent greater for congestive heart failure. For Black beneficiaries, income differentials were less pronounced. See Table 4 at the end of this report and References, Appendix II, for more details.

Figure 3b Hospitalizations per 1,000 Medicare Beneficiaries by Race and Income: Persons Age 65 Years and Older, 1993, All Diagnoses



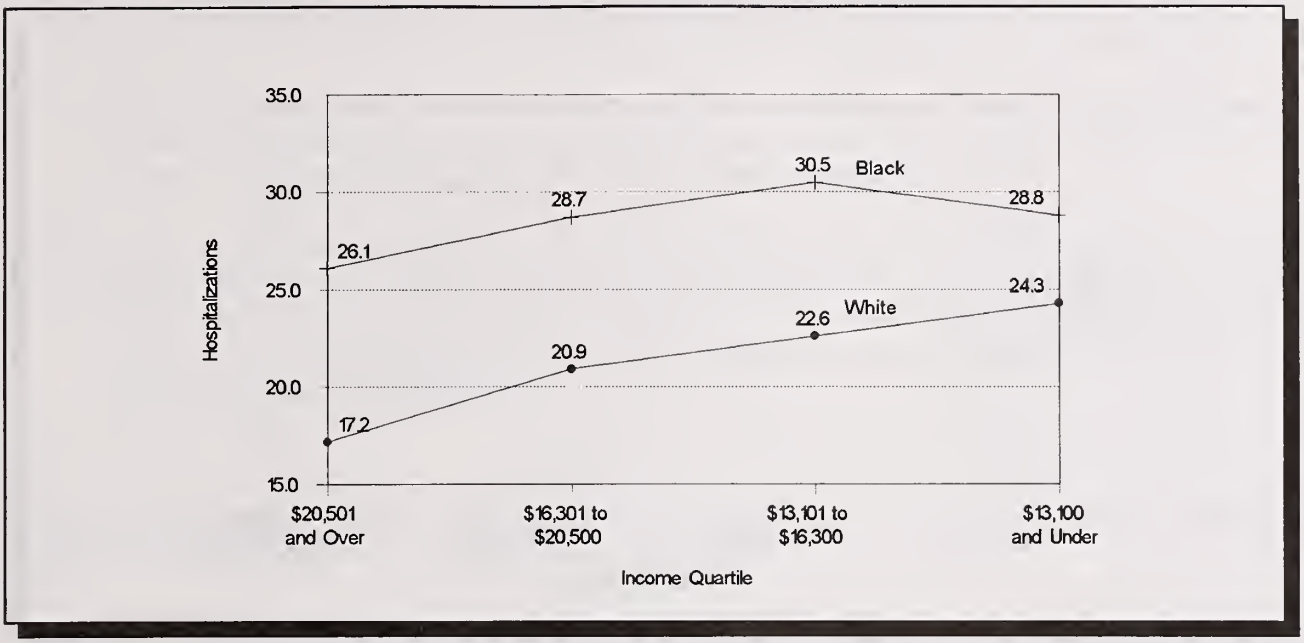
NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator, National Claims History and MEDPar Files, and 1990 U.S. Census of the Population.

Figure 4a Hospitalizations per 1,000 Medicare Beneficiaries by Race and Income: Persons Age 65 and Older, 1993, Ischemic Heart Disease



NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator and MEDPar Files and 1990 U.S. Census of the Population.

Figure 4b Hospitalizations per 1,000 Medicare Beneficiaries by Race and Income: Persons Age 65 and Older, 1993, Congestive Heart Failure



NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator and MEDPar Files and 1990 U.S. Census of the Population.

Hospitalization Rates for Hypertension

- **Race**—Hospitalization rates for hypertension were more than twice as high for Black beneficiaries than for White beneficiaries (overall Black:White ratio = 2.35).

- **Income**—There was no notable pattern for Black beneficiaries by income quartiles. For White beneficiaries the pattern was striking; in the lowest income quartile, the rate for White beneficiaries was more than twice the rate of White beneficiaries in the highest income quartile.

PTCA and CABG Procedures

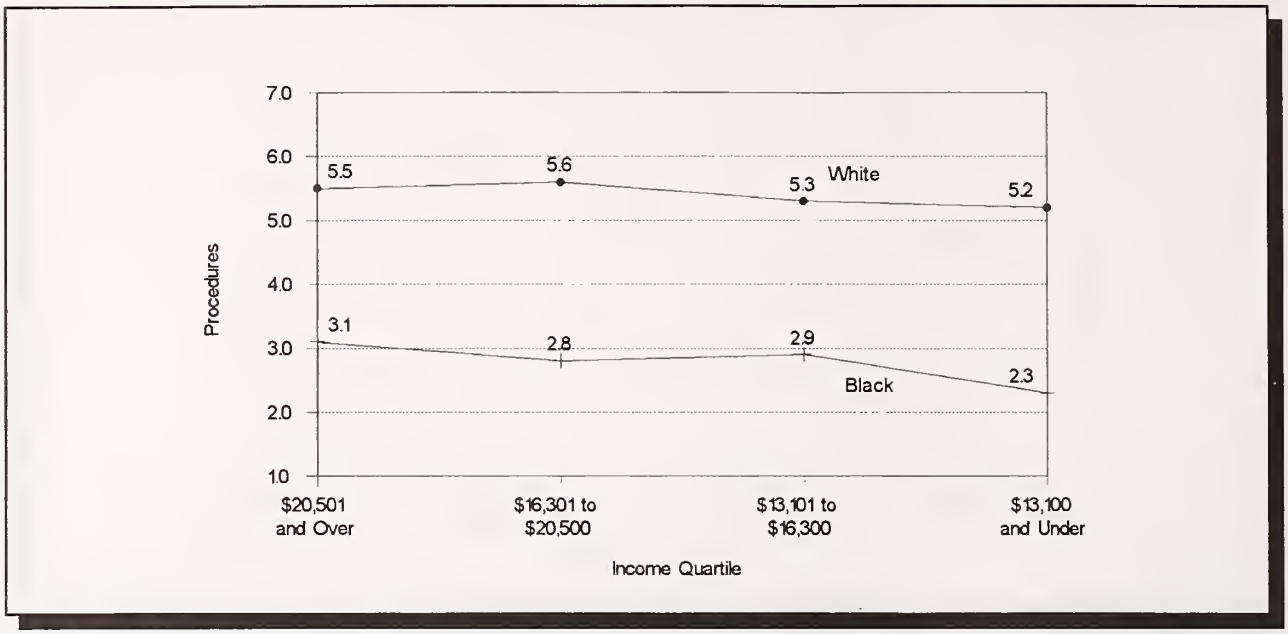
The 1993 procedure rates are shown in Figure 5(a) for percutaneous transluminal coronary angioplasty (PTCA) and in Figure 5(b) for CABG. The most frequent indication for these procedures is ischemic heart disease.

- **Race**—For both procedures, the rates for Black beneficiaries were less than half the rates for White beneficiaries, which may reflect, to some extent, the lower rate of ischemic heart disease hospitalizations among Black beneficiaries (overall Black:White ratio for CABG = 0.40; Black:White ratio for PTCA = 0.46).

- **Income**—For White beneficiaries, there was not much of an income effect for these two procedures.

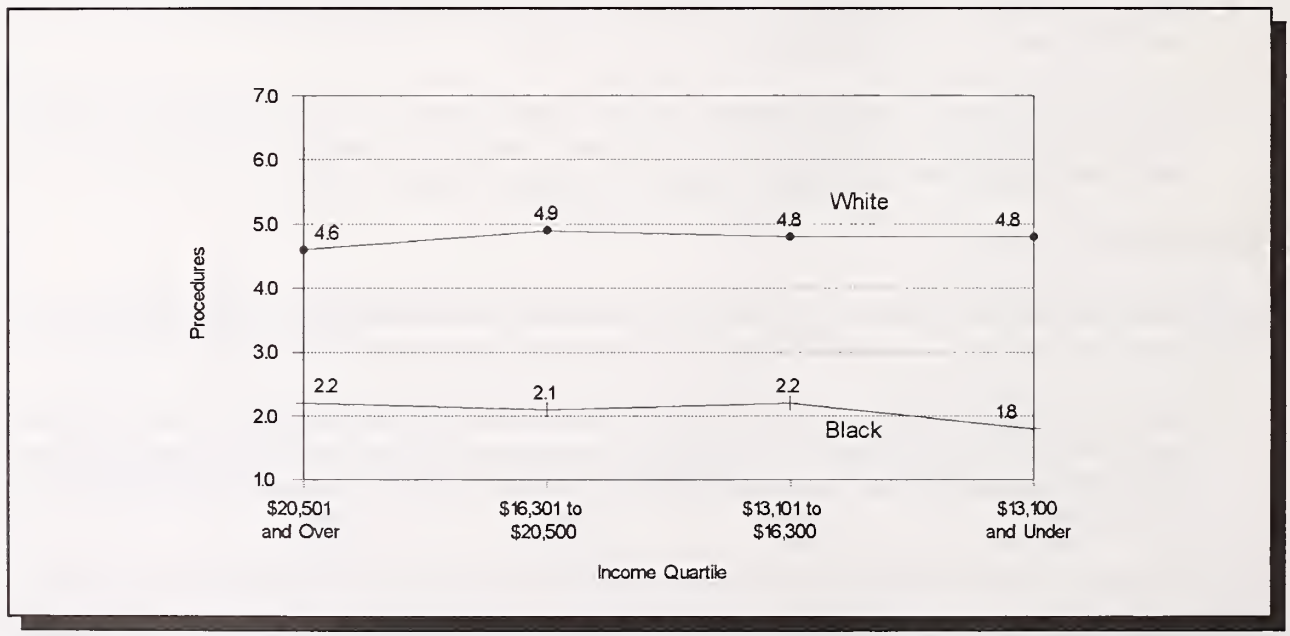
For both procedures, Black beneficiaries in the lowest income quartile had substantially lower rates than Black beneficiaries in the highest quartile; the differential between the highest and lowest income quartiles for CABG rates was 16 percent and for PTCA, 24 percent. See Table 5 at the end of this report and References, Appendix II, for details.

Figure 5a Hospitalizations per 1,000 Medicare Beneficiaries by Race and Income: Persons Age 65 Years and Older, 1993, Percutaneous Transluminal Coronary Angioplasty



NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator and MEDPar Files and 1990 U.S. Census of the Population.

Figure 5b Hospitalizations per 1,000 Medicare Beneficiaries by Race and Income: Persons Age 65 Years and Older, 1993, Coronary Artery Bypass Graft



NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator and MEDPar Files and 1990 U.S. Census of the Population.

Selected Surgical Procedures

Table 6 at the end of this report shows 1993 rates of utilization for six common procedures: prostatectomy, cholecystectomy, repair of inguinal hernia, simple/radical mastectomy, hysterectomy, and appendectomy.

- **Race**—Compared to the differentials found by race for the revascularization procedures, the differentials are less marked, but notable in several of these more traditional procedures. The Black:White ratio of the use rates ranged from 0.66 for hysterectomy to 1.03 for prostatectomy.

- **Income**—For all but one of the procedures, the differentials by income are relatively small for both Black and White beneficiaries. For example, the rates of simple/radical mastectomy are nearly the same at every income level. The one exception is cholecystectomy. For White beneficiaries in the lowest income quartile the rate was 33 percent higher than the rate in the highest income quartile; for Black beneficiaries the corresponding figure was 14 percent.

Bilateral Orchiectomy

Bilateral orchiectomy is a procedure identified as one of the few in-hospital procedures that has a substantially higher rate for Black beneficiaries than for White beneficiaries.

- **Race**—As shown in Figure 6 and Table 7, rates in 1993 for bilateral orchiectomy were more than twofold greater for Black beneficiaries than for White beneficiaries. The rate for Black beneficiaries was 2.03 procedures per 1,000 enrollees and for White beneficiaries the rate was 0.83 procedures per 1,000, or a Black:White ratio of 2.45.

- **Income**—Although across income quartiles there were no consistent patterns evident for Black beneficiaries, there were marked differences by income for White beneficiaries. The rate of bilateral orchiectomy increased steadily as income declined. The rate of bilateral orchiectomy for White men in the lowest income quartile was 43 percent greater than the rate for White men in the highest income quartile.

Electronic Portal Imaging

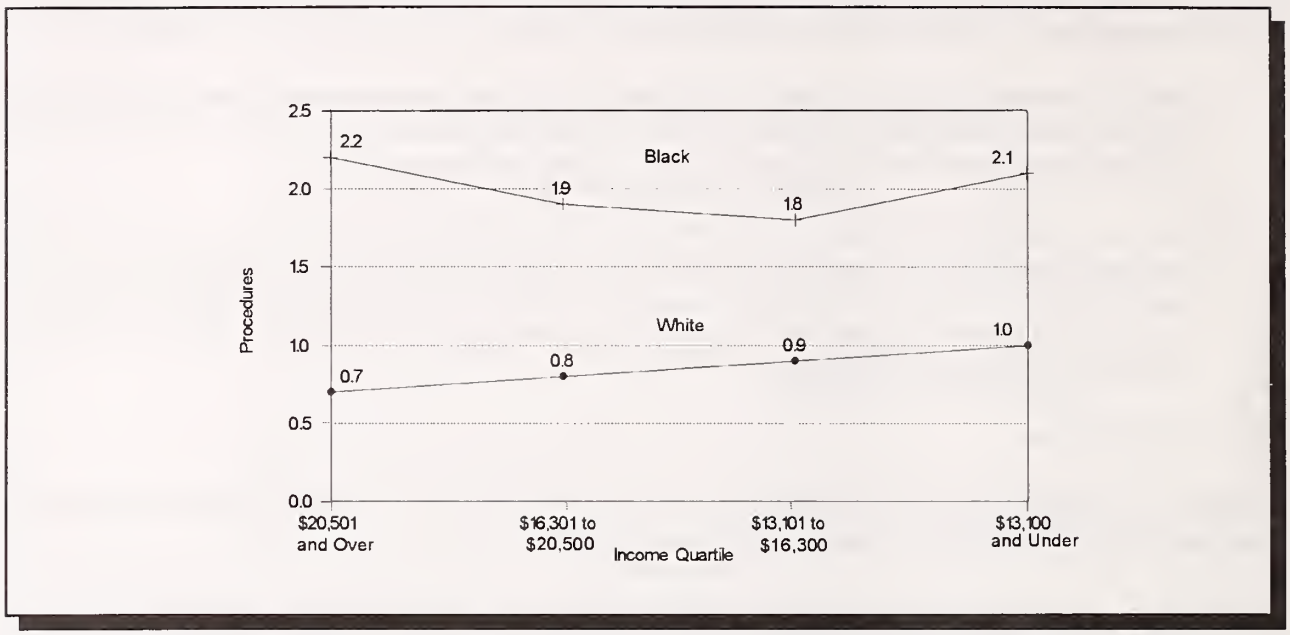
The effect of race and income on seven procedures that were identified as undergoing adaptations and various changes was also studied. (These seven procedures were not restricted to those performed in the hospital.) It was hypothesized that rates would be higher for beneficiaries in higher income quartiles.

Figure 7 shows 1993 procedure rates for "electronic portal imaging," one of the seven changing procedures studied.

- **Race**—The rate of electronic portal imaging was 17 percent lower for Black beneficiaries than for White beneficiaries (overall Black:White ratio = 0.83).

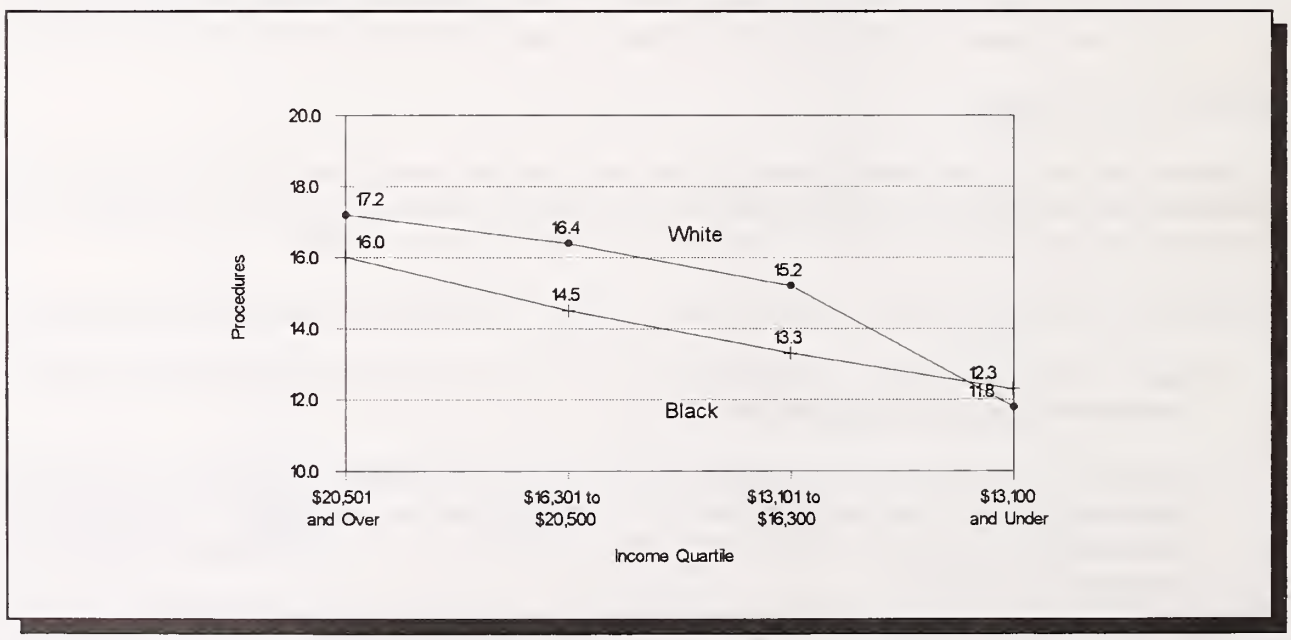
- **Income**—There was a decided income effect. The procedure rate for White beneficiaries in the lowest income quartile was 31 percent lower than the rate for the highest income quartile. The corresponding differential for Black beneficiaries was 23 percent. See Table 8 at the end of this report and References, Appendix III, for details.

Figure 6 Hospitalizations per 1,000 Medicare Beneficiaries by Race and Income: Persons Age 65 and Older, 1993, Bilateral Orchiectomy



NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator and MEDPar Files and 1990 U.S. Census of the Population.

Figure 7 Services per 1,000 Medicare Beneficiaries by Race and Income: Persons Age 65 and Older, 1993, Electronic Portal Imaging



NOTE: Use rates are age- and sex-adjusted to the total Medicare population.
SOURCE: Data derived from the 1993 Medicare Denominator and National Claims History Files, and 1990 U.S. Census of the Population.

These analyses of utilization of Medicare services show that patterns by race often vary substantially by type of service and across income quartiles. Next examined is the effect of racial differences in income distributions on the observed Black:White ratios.

QUESTION 3: TO WHAT EXTENT DOES STANDARDIZATION OF INCOME BETWEEN BLACK AND WHITE BENEFICIARIES REDUCE RACIAL DIFFERENCES IN MORTALITY RATES AND UTILIZATION OF MEDICARE SERVICES?

As shown earlier in this report, Black beneficiaries and White beneficiaries have very different income distributions. It is generally believed that income (as a measure of SES) affects access to care. To determine the effect of differences by race in the income distributions, income was standardized by assuming that 25 percent of the Black population and 25 percent of the White population fell into each income quartile.

If income differences have an appreciable effect on the racial differences observed in mortality rates and utilization rates, income standardization will adjust the "crude" rates for White beneficiaries and Black beneficiaries to rates that are closer to each other (that is, the Black:White ratios will be closer to 1.00). However, it is important to observe that income standardization adjusts the income distributions only, leaving the race-specific procedure rates unaffected. Consequently, income standardization can change the Black:White ratios and bring them closer to 1.00 if, and only if, the race-specific rates are at least equal at some of the income quartiles.

Table A shows the Black:White ratios for mortality and utilization before and after income standardization. It is apparent that income standardization tended to have a relatively small effect on mortality rates. The Black:White ratio of mortality rates for men, which was 1.18, was reduced only a small amount after income standardization to 1.16. The Black:White ratio of mortality rates for women (1.16) was not affected at all by income standardization (see Table 2). This is explained by the fact that at each income quartile mortality rates for Black men were higher than for White men. Thus, standardizing the income distribution by race would be expected to have only a minimal effect in reducing the Black:White mortality ratio.

Table A Effect of Income Standardization on Black/White Differential for Mortality by Sex and for Hospitalization and for Selected Procedures, Medicare Beneficiaries Age 65 Years and Older, 1993

	Black/White Ratio	
	Age/Sex* Adjusted	Age/Sex* and Income Adjusted
Mortality		
Male	1.18	1.16
Female	1.16	1.16
Ambulatory physician visits	0.89	0.93
Magnetic Resonance Imaging	0.81	0.95
Standard Imaging Breast Procedures	0.66	0.75
Hospitalization rates		
All diagnoses	1.14	1.15
Ischemic heart disease	0.74	0.78
Congestive heart failure	1.37	1.34
Procedures (in hospital)		
Percutaneous transluminal coronary angioplasty	0.46	0.51
Coronary artery bypass graft	0.40	0.43
Cholecystectomy	0.69	0.63
Bilateral orchiectomy	2.45	2.32
Electronic Portal Imaging	0.83	0.92

*Mortality, mammography, partial mastectomy, and bilateral orchiectomy were age-adjusted only.

SOURCE: Data derived from the Medicare 1993 National Claims History File, the 1993 Medicare Denominator File, and the 1990 Census of the Population.

With regard to utilization, income adjustment generally changed the Black:White ratio in the expected direction, although not always. Often the change was slight. For the total hospital discharge rate, the Black:White ratio changed from 1.14 to 1.15 with income standardization. The Black:White ratio for hospitalization for ischemic heart disease changed from 0.74 to 0.78, while the ratio for congestive heart failure changed from 1.37 to 1.34 with standardization (see Table 4).

Income standardization had a substantial effect for certain services, indicating that SES plays a role in access to care. The Black:White ratio of 0.89 for the ambulatory visit rate was changed to 0.93 by income standardization. For magnetic resonance imaging (MRI), the Black:White ratio of the rates increased from 0.81 to 0.95 by income standardization. For standard imaging breast procedures (mammography), income standardization raised the Black:White ratio of the rates from 0.66 to 0.75 (see Table 3).

CONCLUSIONS: PART I

The above analyses do not respond directly to the requirement for monitoring the impact of Medicare physician payment changes on access to care. (Part II focuses on that issue.) However, these analyses provide new insight into the factors affecting access. These analyses also raise two issues.

First, more study is needed to understand why the effect of SES (as measured by income) tended to be less pronounced for Black beneficiaries than for White beneficiaries. Because SES is affected by the entire lifetime experience of an individual, it may be that income at age 65 and older is a less sensitive indicator for capturing lifetime SES for Black beneficiaries than it is for White beneficiaries. It may also be the case that factors other than SES (and not captured in the data), such as cultural influences, play an important role in the patterns of care observed.

Second, it is important to observe that "need" for care can only be inferred from claims data. For example, Black beneficiaries have lower rates of hospitalizations for ischemic heart disease, which suggests that, at least in part, their lower rates of CABG and PTCA procedures may be appropriate. However, while utilization data is an important indicator of access to care, it nonetheless cannot provide a direct measure of the prevalence of disease. Analyses of the differences presented in this report would be strengthened if information were available to control for differences in need.

Despite the limitations of the data, these analyses lead to the following conclusions:

- There are very substantial differences in the income distributions of Medicare beneficiaries across races. Twenty-seven percent of all White beneficiaries fell into the highest income quartile, but only 6 percent of all Black beneficiaries fell into the highest income quartile. In contrast, 19 percent of all White beneficiaries fell into the lowest income quartile, while 73 percent of all Black beneficiaries fell into the lowest income quartile.

- The higher mortality rates for Black beneficiaries than for White beneficiaries indicate that health status is lower among Black beneficiaries.

- For Black beneficiaries the ambulatory physician visit rate is lower than for White beneficiaries; in contrast, for Black beneficiaries the total hospitalization rate was higher than the rate for White beneficiaries. These utilization patterns suggest that Black beneficiaries may experience more barriers to comprehensive and continuous care than White beneficiaries.

- For many common procedures, such as coronary artery bypass graft (CABG), percutaneous transluminal coronary angioplasty (PTCA), and knee and hip replacements, utilization rates are

higher for White beneficiaries than for Black beneficiaries, suggesting that Black beneficiaries are at risk of experiencing barriers to several referral-sensitive procedures.

- The most important new knowledge gained from these analyses is that lower SES, in and of itself, is also a risk factor for all Medicare population groups, including White beneficiaries. The new analyses showed that:
  - The rate of ambulatory physician visits declined 18 percent for White beneficiaries and 12 percent for Black beneficiaries as income declined.
  - Among Black beneficiaries in the lowest income group, rates of referral-sensitive procedures such as PTCA were 24 percent lower than the rates for Black beneficiaries in the highest income quartile. The corresponding difference for CABG was 16 percent.
  - Among White beneficiaries in the lowest income quartile, the rate of hospitalization for hypertension was more than twice as high as the rate for beneficiaries in the highest income quartile.
  - The rate of bilateral orchiectomy was 43 percent greater for the least affluent White males than for the most affluent White males.
- Standardization of income across races showed that if the income distributions for Black beneficiaries and White beneficiaries were equal, the racial differences in utilization rates for many services would decrease, although generally by only a modest amount. But, for some services, such as ambulatory physician visits, magnetic resonance imaging (MRI), and mammography, the standardization of income diminished appreciably the disparities by race—indicating that low income among Black beneficiaries plays a substantial role with regard to access to care for certain services.

Part II Summary of the Updated Studies That Monitor Utilization and Access

BACKGROUND

The Secretary's 1994 *Report to Congress* summarized the major findings from eight studies that were designed to monitor utilization and access following the implementation of the MFS. These studies focus on monitoring the impact of the MFS on several vulnerable population groups:

- **Beneficiaries who are living under the poverty level,** who may face barriers to care because of income.
- **Beneficiaries dually eligible for Medicare and Medicaid,** who may face barriers to care because of income and health status.
- **Black beneficiaries,** who may face racial or socioeconomic barriers.
- **Disabled beneficiaries under age 65 and very old beneficiaries,** who may face barriers because they have greater levels of chronic illnesses and continuing care needs or because of their frailty.
- **Beneficiaries without supplemental health insurance,** who may face barriers from out-of-pocket costs. (Increases in physicians' fees for visits automatically increase beneficiary coinsurance.)
- **Beneficiaries residing in rural areas,** because the supply of physicians in rural areas is lower than average.
- **Beneficiaries residing in areas designated as health professional shortage areas (HPSAs).**
- **Beneficiaries residing in areas expected to experience the greatest decreases in average Medicare fees**, because the supply of services might be curtailed.

To gain a broad perspective, a number of measures are being monitored:

- **Ambulatory physician visit rates.**
- **Percent of persons reporting a health condition and not receiving any care in the previous years.**
- **Use of preventive services.**
- **Hospitalization rates for conditions that are considered sensitive to appropriate and continuing ambulatory care.**
- **Use of referral-sensitive procedures.**

The major data sources being used to monitor utilization and access are the Medicare Part B monitoring files, Medicare Part A data, Medicare enrollment data, and two national surveys: the Medicare Current Beneficiary Survey and the National Health Interview Survey sponsored by the National Center for Health Statistics.

All eight studies in the 1994 access report have been updated as part of the monitoring of the implementation of the MFS. One study also was expanded to analyze changes in the treatment of patients hospitalized with stroke or acute myocardial infarction (AMI) after the MFS was implemented. Six of these studies were prepared by HCFA staff, and two (including the expanded study) were conducted under a cooperative agreement with the Center for Health Economics Research (CHER).

These studies were designed to answer questions 4–6 (listed below) that address major policy issues relating to the implementation of the MFS:

- Did the MFS invoke the kinds of payment changes anticipated?
- Did payment reform present new barriers for vulnerable population groups?
- What have been the impacts of the MFS on physicians' practices?

The major findings of the updated studies are presented in Tables 9–23 at the end of this report. These Tables, containing the latest available data, are similar to the Tables presented in the 1994 report.

The complete studies are included as References, Appendices IV–XII. In addition, References, Appendix XIII, provides information on other relevant activities and future work. A brief overview of the latest findings that address the three major policy issues follows.

FINDINGS

QUESTION 4: DID THE MFS INVOKE THE KINDS OF PAYMENT CHANGES ANTICIPATED WITH REGARD TO SHIFTS OF MEDICARE PAYMENTS FROM PROCEDURAL SERVICES TOWARD EVALUATION AND MANAGEMENT SERVICES?

The updated studies again show that the MFS produced the kinds of shifts in payment that were anticipated.

For example, between 1992 and 1993, allowed charges for Part B claims increased 9.3 percent for medical visits and consultations while they declined 2.4 percent for surgery, radiation therapy, anesthesia, and assistants at surgery. (See Tables 9–12 and References, Appendix IV.) As shown in Table 13 (also References, Appendix V), between 1992 and 1993, the rate per 1,000 beneficiaries declined for several procedures.

QUESTION 5: DID PAYMENT REFORM PRESENT NEW BARRIERS FOR VULNERABLE POPULATIONS?

The updated studies again show that for the vulnerable populations studied no new barriers to care were found. However, there continue to be numerous indications that many population groups face barriers to care. Several examples follow.

In 1992, outpatient visits in HPSAs were significantly lower than in non-shortage areas, lower in rural poor areas than in non-poor areas, lower for Black beneficiaries than for White beneficiaries, lower for those 85 years of age and older than for those under 85, and lower for rural areas than for urban areas. See Table 14 for details.

As noted in previous reports, insurance coverage plays a role in access to care. Medicare beneficiaries 65 years of age and older without private supplementary insurance or other public program coverage are less likely to see a physician during the year. This was also true of the uninsured ages 18–64. See Table 15 and References, Appendix IX.

Moreover, the disabled under Medicare had higher proportions of persons reporting a health problem and not receiving care than the aged. Of those disabled with a health problem and not receiving care, 71.4 percent (or 12.2

percent of all disabled) reported financial barriers as reasons for not receiving care. See Table 16 and References, Appendix VIII.

The use of Medicare-covered preventive services in 1992 tended to be lower for many vulnerable groups. In 1992, the rate of mammograms was lower in HPSAs, in poor areas, for Black beneficiaries, for those dually eligible for Medicare and Medicaid, and for rural residents. See Table 17 and References, Appendix VII.

For every vulnerable population group studied, the rate of hospitalization for ambulatory care sensitive (ACS) hospital admissions in 1993 was higher than for the nonvulnerable population. That is, ACS hospital admission rates were significantly higher in HPSAs, in poor areas, for Black beneficiaries, for the dually eligible, for the disabled under Medicare; for those age 85 years and older; and for rural residents. Similar findings were also reported for ACS hospital admissions in 1991 and 1992. See Table 18 and References, Appendix VII.

The 1993 data for the major in-hospital procedures show that the differential by race has been decreasing since 1990. The lowest 1993 ratios are for heart and vascular procedures: CABG (0.41), PTCA (0.46), and cardiac endarterectomy (0.31). See Table 19 and References, Appendix VI.

Between 1991 and 1992, there was no decline in the rate of major tests performed during the initial stay for patients hospitalized with stroke. However, some of the vulnerable subgroups had lower rates of certain of these tests. For example, the rate of MRI brain scans was lower than average for rural beneficiaries and for the dually eligible. See Table 20 and References, Appendix XII.

QUESTION 6: WHAT HAVE BEEN THE IMPACTS OF THE MFS ON PHYSICIANS' PRACTICES?

The updated analyses show that caseload for physicians in primary care and medical specialties has tended to increase more than for surgeons. Also, the updated analyses show that mean allowed charges per physician in the medical specialties have tended to increase more between 1992 and 1993 than the mean allowed charges per physician in other specialties. See Tables 21 and 22 for details and References, Appendix XI.

Table 23 presents trends in the ratio of medical specialists to the number of Medicare beneficiaries. This ratio has increased since 1984 for the United States as a whole and for metropolitan areas, but this increase is not necessarily attributable to the MFS. For nonmetroplitan areas, however, this ratio has changed little since 1991. See Table 23 and References, Appendix X.

CONCLUSIONS: PART II

From the continuing broad perspective being used for monitoring utilization and access to care for Medicare beneficiaries, the conclusions drawn from the 1994 report hold true for this report:

- The MFS produced the kinds of shifts in payments that were anticipated.
- For vulnerable populations studied, no new barriers to care were found. However, there are continuing indications that many population groups face barriers to care.
- Additional understanding is needed of barriers to care for vulnerable populations to further improve their access to care.

FUTURE WORK

HCFA intends to expand its monitoring and analyses of access to care along three lines:

- The SES studies will be refined by using multi-variate techniques that include additional SES variables from the U.S. Census, such as educational attainment.

- The SES analyses will be refined by using the census tract as the unit of aggregation instead of the zip code. The feasibility of this effort depends upon the ability of HCFA to map current beneficiary residence information into census tract designations.

- The current monitoring system will be improved to monitor additional indicators. For example, HCFA intends to monitor the use of all preventive services and hospitalizations for referral-sensitive conditions.

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The individual analyses were prepared by HCFA staff except for three, prepared under a cooperative agreement with the Center for Health Economics Research by Margo Rosenbach, Ph.D., Janet Mitchell, Ph.D., Rezaul Khandker, Ph.D., Killard Adamache, Ph.D., and Diane McPartlin. Individual HCFA analyses were prepared by William Sobaski and Benson Dutton; Ann Meadow, Sc.D.; Paul Eggers, Ph.D.; Leslye Fitterman, Ph.D., and Thomas Reilly, Ph.D.; Lawrence Kucken; Joan Warren, Ph.D.; and Renee Mentnech.

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This report, summarizing the individual analyses, was written by Marian Gornick, Paul Eggers, Thomas Reilly, and Renee Mentnech. Cheryl Hickman was responsible for the preparation of the manuscript.

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Appendix I—Eggers, P. W. *Effect of Income and Race on Access to Selected Part B Services.*

Appendix II—Fitterman, L., & Reilly, T. *The Effect of Income and Race on Access to Selected Part A Procedures.*

Appendix III—Kucken, L. *Effect of Income, Race, and Urbanicity on Access to Selected Changing Procedures and Technologies.*

Appendix IV—Dutton, B., & Sobaski, W. *Medicare Fee Schedule's Impacts on the Distribution of Allowed Charges.*

Appendix V—Eggers, P. W. *Beneficiary Access and Utilization.*

Appendix VI—Fitterman, L. *Monitoring Part A.*

Appendix VII—Mitchell, J. B., Khandker, R. K., & McPartlin, D. N. *Access to Physician Services for Vulnerable Beneficiaries: Impact of the Medicare Fee Schedule.*

Appendix VIII—Rosenbach, M. L., Adamache, K. D., & Khandker, R. K. *Trends in Utilization, Access, and Satisfaction with Care Among Noninstitutionalized Medicare Beneficiaries: 1991–1993.*

Appendix IX—Mentnech, R. *An Analysis of Utilization and Access from the National Health Interview Survey: 1984–1992.*

Appendix X—Kucken, L. E. *Trends in Physician Supply.*

Appendix XI—Meadow, A. *Access to Care in the Early Years of Fee Schedule Implementation: A Physician-based Analysis.*

Appendix XII—Mitchell, J. B., McPartlin, D. N., & Khandker, R. K. *Impact of the Medicare Fee Schedule on Patterns of Care: Acute Myocardial Infarction and Stroke Patients.*

Appendix XIII—Warren, J. *Other Relevant Activities and Future Work.*

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Table 1 Medicare Beneficiaries Age 65 and Older, by Age, Sex, Race, and Income Level of Zip Code of Residence, 1993

Income Level	Age Group			Total	Percent
	65 to 74	75 to 84	85 +	Age 65 and Over	Distribution
White Beneficiaries:					
			Male		
Total White Male	**5,896,683**	**3,149,702**	**754,544**	**9,800,929**	**100.0%**
$20,501 and over	1,578,019	825,030	194,047	2,597,096	27.7%
$16,301 to $20,500	1,524,441	817,307	191,842	2,533,590	27.0%
$13,101 to $16,300	1,449,852	790,643	191,056	2,431,551	25.9%
$13,100 and under	1,082,443	585,258	145,595	1,813,296	19.3%
Unknown	261,928	131,464	32,004	425,396	---
			Female		
Total White Female	**7,490,539**	**5,211,814**	**2,094,595**	**14,796,948**	**100.0%**
$20,501 and over	1,993,157	1,325,578	560,475	3,879,210	27.2%
$16,301 to $20,500	1,974,229	1,371,488	540,153	3,885,870	27.3%
$13,101 to $16,300	1,871,946	1,339,772	528,857	3,740,575	26.2%
$13,100 and under	1,364,388	996,091	390,591	2,751,070	19.3%
Unknown	286,819	178,885	74,519	540,223	---
Black Beneficiaries:					
			Male		
Total Black Male	**489,331**	**235,131**	**63,142**	**787,604**	**100.0%**
$20,501 and over	31,198	12,398	2,919	46,515	6.3%
$16,301 to $20,500	36,733	14,628	3,226	54,587	7.4%
$13,101 to $16,300	65,049	28,012	6,434	99,495	13.6%
$13,100 and under	322,683	163,999	45,946	532,628	72.6%
Unknown	33,668	16,094	4,617	54,379	---
			Female		
Total Black Female	**705,202**	**444,256**	**175,706**	**1,325,164**	**100.0%**
$20,501 and over	42,923	23,886	9,048	75,857	6.1%
$16,301 to $20,500	51,721	27,918	9,850	89,489	7.1%
$13,101 to $16,300	92,563	52,412	18,892	163,867	13.1%
$13,100 and under	479,375	316,097	127,503	922,975	73.7%
Unknown	38,620	23,943	10,413	72,976	---

SOURCES: Data derived from the 1993 Medicare Denominator File and the 1990 Census of the Population.
Counts are of Part B Person Years, excluding HMO enrollment.

Table 2 Mortality Rate: Deaths per 100 Medicare Beneficiaries Age 65 Years and Older, by Race, Sex, and Income: 1993

Income Level	Age Group			Crude Total	Age Adjusted Total	Relative Mortality Adj. Total
	65 to 74	75 to 84	85 +			
Male Beneficiaries:						
			White men			
Total	**3.5**	**8.1**	**19.0**	**6.1**	**6.7**	
$20,501 and over	2.9	7.3	18.9	5.4	6.2	1.00
$16,301 to $20,500	3.5	8.1	19.2	6.1	6.8	1.10
$13,101 to $16,300	3.8	8.5	19.3	6.5	7.1	1.14
$13,100 and under	4.0	8.9	19.1	6.8	7.3	1.19
Income Adjusted					**6.8**	
			Black men			
Total	**5.1**	**9.8**	**16.9**	**7.5**	**8.0**	
$20,501 and over	4.4	9.9	17.6	6.6	7.7	1.00
$16,301 to $20,500	4.6	9.5	18.1	6.6	7.8	1.01
$13,101 to $16,300	5.0	9.6	18.2	7.1	8.0	1.04
$13,100 and under	5.3	9.9	16.7	7.8	8.1	1.06
Income Adjusted					7.9	
Black/White Ratio						
Total					**1.18**	
Income Adjusted					**1.16**	
Female Beneficiaries:						
			White women			
Total	**2.1**	**5.1**	**14.8**	**4.9**	**4.5**	
$20,501 and over	1.8	5.0	15.3	4.8	4.4	1.00
$16,301 to $20,500	2.1	5.1	14.9	4.9	4.5	1.03
$13,101 to $16,300	2.1	5.1	14.7	5.0	4.5	1.04
$13,100 and under	2.2	5.2	14.5	5.1	4.6	1.05
Income Adjusted					**4.5**	
			Black women			
Total	**3.1**	**6.3**	**12.9**	**5.5**	**5.2**	
$20,501 and over	2.7	6.7	14.7	5.3	5.3	1.00
$16,301 to $20,500	2.8	5.9	13.6	4.9	5.0	0.94
$13,101 to $16,300	3.0	6.3	14.1	5.3	5.3	1.00
$13,100 and under	3.1	6.2	12.5	5.5	5.2	0.97
Income Adjusted					**5.2**	
Black/White Ratio						
Total					**1.16**	
Income Adjusted					**1.16**	

SOURCE: Data received from the 1993 Medicare Denominator File and the 1990 Census of the Population.
Rates are based on Part A Person Years, excluding HMO enrollment.

Table 3 Use of Selected Services Covered Under the Medicare Fee Schedule for White and Black Beneficiaries Age 65 Years and Older, by Income of Zip Code of Residence, 1993

Race and Income	Ambulatory Physician Visits*		Emergency Room Physician Visits		Cataract Removal/ Lens Insertion		Computerized Axial Tomography Scans		Magnetic Resonance Imaging Procedures		Standard Imaging Breast Procedure**	
	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR
All Beneficiaries:												
Total	**8.0**		**36.0**		**4.6**		**22.2**		**4.2**		**25.0**	
$20,501 and over	8.9	1.00	29.7	1.00	4.5	1.00	22.2	1.00	5.4	1.00	30.2	1.00
$16,301 to $20,500	8.2	0.92	34.9	1.18	4.6	1.02	22.8	1.03	4.4	0.81	26.7	0.88
$13,101 to $16,300	7.6	0.85	37.6	1.27	4.6	1.02	22.2	1.00	3.8	0.70	23.8	0.79
$13,100 and under	7.3	0.82	41.3	1.39	4.7	1.04	22.2	1.00	3.4	0.63	20.0	0.66
White Beneficiaries:												
Total	**8.1**		**35.0**		**4.7**		**22.1**		**4.3**		**26.0**	
$20,501 and over	9.0	1.00	29.6	1.00	4.5	1.00	22.3	1.00	5.5	1.00	31.0	1.00
$16,301 to $20,500	8.3	0.92	34.6	1.17	4.7	1.03	22.9	1.02	4.4	0.81	27.2	0.88
$13,101 to $16,300	7.6	0.85	36.8	1.24	4.7	1.04	21.9	0.98	3.8	0.69	24.1	0.78
$13,100 and under	7.3	0.82	39.9	1.35	4.8	1.07	21.7	0.97	3.4	0.62	20.8	0.67
Income Adjusted	**8.1**		**35.4**		**4.7**		**22.2**		**4.3**		**25.7**	
Black Beneficiaries:												
Total	**7.2**		**50.6**		**3.8**		**25.0**		**3.5**		**17.1**	
$20,501 and over	8.0	1.00	44.2	1.00	3.4	1.00	27.5	1.00	4.5	1.00	20.4	1.00
$16,301 to $20,500	7.4	0.92	45.8	1.04	3.5	1.03	26.4	0.96	4.3	0.94	19.9	0.98
$13,101 to $16,300	7.7	0.97	52.2	1.18	3.7	1.09	28.1	1.02	4.3	0.95	21.1	1.03
$13,100 and under	7.1	0.88	51.6	1.17	3.9	1.16	24.6	0.89	3.3	0.72	16.0	0.79
Income Adjusted	**7.6**		**48.6**		**3.6**		**26.5**		**4.1**		**19.2**	
Black/White Ratio:												
Total		**0.89**		**1.45**		**0.81**		**1.13**		**0.81**		**0.66**
Income Adjusted		**0.93**		**1.37**		**0.77**		**1.19**		**0.95**		**0.75**

Key: AR = rate per 100 beneficiaries, except for the Ambulatory Visits rates, adjusted for age and sex; RR = income quartile and Black/White Ratios.

*Ambulatory visit rates are calculated on a per person basis.

**Breast procedures are calculated for females only.

SOURCES: Data derived from the 1993 National Claims History, the 1993 Medicare Denominator File, and the 1990 Census of the Population.

Table 4 Hospitalization Age and Sex Adjusted Rates and Risk Ratios for All Diagnoses Combined and for Heart and Vascular-Related Diagnoses, for Medicare Beneficiaries Age 65 Years and Older, by Race and Income, 1993

	All Hospitalizations		Heart Disease		Ischemic Heart Disease		Acute Myocardial Infarction		Congestive Heart Failure		Hypertension	
	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR
All Beneficaries:												
Total	**332.84**		**72.58**		**33.15**		**11.67**		**21.53**		**0.83**	
$20,501 and over	298.39	1.00	63.74	1.00	29.50	1.00	10.22	1.00	17.40	1.00	0.54	1.00
$16,301 to $20,500	326.20	1.09	72.92	1.14	34.13	1.16	11.77	1.15	21.10	1.21	0.69	1.28
$13,101 to $16,300	344.45	1.15	76.27	1.20	35.27	1.20	12.63	1.24	22.92	1.32	0.86	1.59
$13,100 and under	370.70	1.24	79.37	1.25	34.51	1.17	12.42	1.22	25.42	1.46	1.28	2.37
White Beneficiaries:												
Total White	**329.12**		**72.34**		**33.82**		**11.93**		**20.91**		**0.75**	
$20,501 and over	296.93	1.00	63.51	1.00	29.51	1.00	10.23	1.00	17.24	1.00	0.52	1.00
$16,301 to $20,500	324.86	1.09	72.81	1.15	34.30	1.16	11.84	1.16	20.91	1.21	0.66	1.27
$13,101 to $16,300	342.20	1.15	76.08	1.20	35.59	1.21	12.79	1.25	22.58	1.31	0.83	1.60
$13,100 and under	369.60	1.24	80.88	1.27	37.71	1.28	13.62	1.33	24.30	1.41	1.10	2.12
Income Adjusted	**333.40**		**73.32**		**34.28**		**12.12**		**21.26**		**0.78**	
Black Beneficiaries:												
Total Black	**375.56**		**74.80**		**25.04**		**8.57**		**28.62**		**1.76**	
$20,501 and over	375.80	1.00	75.01	1.00	27.95	1.00	9.20	1.00	26.06	1.00	1.70	1.00
$16,301 to $20,500	386.56	1.03	77.28	1.03	26.57	0.95	8.22	0.89	28.71	1.10	1.73	1.02
$13,101 to $16,300	397.20	1.06	80.32	1.07	27.50	0.98	8.81	0.96	30.53	1.17	1.54	0.91
$13,100 and under	373.80	0.99	74.26	0.99	24.29	0.87	8.56	0.93	28.82	1.11	1.82	1.07
Income Adjusted	383.34		76.72		26.58		8.70		28.53		1.70	
Black/White Ratio:												
Total	**1.14**			**1.03**		**0.74**		**0.72**		**1.37**		**2.35**
Income Adjusted	**1.15**			**1.05**		**0.78**		**0.72**		**1.34**		**2.18**

Key: AR = rate per 1,000 beneficiaries, adjusted for age and sex; RR = income quartile and Black/White risk ratios.

Sources: Data derived from the 1993 Medicare Provider Analysis and Review File, 1993 Medicare Denominator File, and the 1990 Census of the Population.

Table 5 Hospitalization Rates and Risk Ratios for Heart and Vascular Procedures, for Medicare Beneficiaries Age 65 Years and Older, by Race and Income, 1993

Race and Income	Cardiac Catheterization		Percutaneous Transluminal Coronary Angioplasty		Coronary Artery Bypass Graft		Carotid Endarterectomy	
	AR	RR	AR	RR	AR	RR	AR	RR
All Beneficiaries:								
Total	**16.04**		**5.17**		**4.54**		**2.26**	
$20,501 and over	15.72	1.00	5.47	1.00	4.53	1.00	2.15	1.00
$16,301 to $20,500	16.72	1.06	5.56	1.02	4.84	1.07	2.47	1.15
$13,101 to $16,300	16.24	1.03	5.21	0.95	4.73	1.04	2.39	1.11
$13,100 and under	15.80	1.01	4.50	0.82	4.13	0.91	2.05	0.95
White Beneficiaries:								
Total White	**16.41**		**5.40**		**4.76**		**2.39**	
$20,501 and over	15.78	1.00	5.52	1.00	4.57	1.00	2.17	1.00
$16,301 to $20,500	16.84	1.07	5.62	1.02	4.90	1.07	2.51	1.16
$13,101 to $16,300	16.42	1.04	5.31	0.96	4.84	1.06	2.47	1.14
$13,100 and under	17.14	1.09	5.19	0.94	4.84	1.06	2.46	1.13
Income Adjusted	**16.55**		**5.41**		**4.79**		**2.40**	
Black Beneficiaries:								
Total Black	**11.54**		**2.48**		**1.91**		**0.74**	
$20,501 and over	12.26	1.00	3.05	1.00	2.18	1.00	0.76	1.00
$16,301 to $20,500	11.74	0.96	2.84	0.93	2.12	0.97	0.74	0.97
$13,101 to $16,300	12.13	0.99	2.89	0.95	2.16	0.99	0.67	0.88
$13,100 and under	11.45	0.93	2.32	0.76	1.84	0.84	0.74	0.97
Income Adjusted	**11.90**		**2.78**		**2.08**		**0.73**	
Black/White Ratio:								
Total		**0.70**		**0.46**		**0.40**		**0.31**
Income Adjusted		**0.72**		**0.51**		**0.43**		**0.30**

Key: AR = rate per 1,000 beneficiaries, adjusted for age and sex; RR = income quartile and Black/White risk ratios.
SOURCES: Data derived from the 1993 Medicare Provider Analysis and Review File, the 1993 Medicare Denominator File, and the 1990 Census of the Population.

Table 6 Hospitalization Adjusted Rates and Risk Ratios for Selected Surgical Procedures, for Medicare Beneficiaries 65 Years of Age and Older, by Race and Income: 1993

Race and Income	Prostatectomy		Cholecystectomy		Repair of Inguinal Hernia		Simple/Radical Mastectomy		Hysterectomy		Appendectomy	
	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR
All Beneficiaries:												
Total	**17.52**		**5.34**		**1.39**		**2.77**		**3.44**		**0.46**	
$20,501 and over	17.13	1.00	4.68	1.00	1.36	1.00	2.79	1.00	3.58	1.00	0.48	1.00
$16,301 to $20,500	17.60	1.03	5.37	1.15	1.36	1.00	2.82	1.01	3.50	0.98	0.46	0.96
$13,101 to $16,300	17.90	1.04	5.72	1.22	1.41	1.04	2.85	1.02	3.47	0.97	0.46	0.96
$13,100 and under	17.83	1.04	5.70	1.22	1.46	1.07	2.66	0.95	3.23	0.90	0.44	0.92
White Beneficiaries:												
Total White	**17.49**		**5.47**		**1.40**		**2.81**		**3.54**		**0.47**	
$20,501 and over	17.07	1.00	4.70	1.00	1.36	1.00	2.80	1.00	3.60	1.00	0.49	1.00
$16,301 to $20,500	17.57	1.03	5.42	1.15	1.36	1.00	2.83	1.01	3.53	0.98	0.46	0.94
$13,101 to $16,300	17.80	1.04	5.82	1.24	1.42	1.04	2.87	1.03	3.52	0.98	0.46	0.94
$13,100 and under	17.95	1.05	6.25	1.33	1.53	1.13	2.76	0.99	3.52	0.98	0.45	0.92
Income Adjusted	**17.60**		**5.55**		**1.42**		**2.82**		**3.54**		**0.47**	
Black Beneficiaries:												
Total Black	**17.94**		**3.80**		**1.23**		**2.33**		**2.32**		**0.37**	
$20,501 and over	20.42	1.00	3.47	1.00	1.30	1.00	2.24	1.00	2.27	1.00	0.35	1.00
$16,301 to $20,500	19.09	0.93	3.15	0.91	1.22	0.94	2.43	1.08	2.11	0.93	0.28	0.80
$13,101 to $16,300	20.30	0.99	3.44	0.99	1.23	0.95	2.27	1.01	2.21	0.97	0.38	1.09
$13,100 and under	17.44	0.85	3.95	1.14	1.25	0.96	2.36	1.05	2.37	1.04	0.38	1.09
Income Adjusted	**19.31**		**3.50**		**1.25**		**2.33**		**2.24**		**0.35**	
Black/White Ratio:												
Total		**1.03**		**0.69**		**0.88**		**0.83**		**0.66**		**0.79**
Income Adjusted		**1.10**		**0.63**		**0.88**		**0.83**		**0.63**		**0.75**

Key: AR = rate per 1,000 beneficiaries, adjusted for age and sex; RR = income quartile and Black/White risk ratios.
NOTE: Hospitalization rates for cholecystectomy and repair of inguinal hernia do not include procedures performed on an outpatient basis.
SOURCES: Data derived from the 1993 Medicare Provider Analysis Review File, the 1993 Denominator File, and the 1990 Census of the Population.

Table 7 Hospitalization Adjusted Rates and Risk Ratios for Surgical Procedures for Which the Rates Are Higher for Black Persons Than for White Persons, and for Medicare Beneficiaries 65 Years of Age and Older, by Race and Income: 1993

Race and Income	Excisional Debridement		Arteriovenostomy		Bilateral Orchiectomy	
	AR	RR	AR	RR	AR	RR
All Beneficiaries:						
Total	**3.09**		**1.13**		**0.92**	
$20,501 and over	2.61	1.00	0.92	1.00	0.72	1.00
$16,301 to $20,500	2.92	1.12	0.95	1.03	0.82	1.14
$13,101 to $16,300	3.02	1.16	1.01	1.10	0.94	1.31
$13,100 and under	3.90	1.49	1.70	1.85	1.25	1.74
White Beneficiaries:						
Total White	**2.74**		**0.84**		**0.83**	
$20,501 and over	2.53	1.00	0.85	1.00	0.70	1.00
$16,301 to $20,500	2.80	1.11	0.87	1.02	0.80	1.14
$13,101 to $16,300	2.82	1.11	0.84	0.99	0.90	1.29
$13,100 and under	2.89	1.14	0.81	0.95	1.00	1.43
Income Adjusted	**2.76**		**0.84**		**0.85**	
Black Beneficiaries:						
Total Black	**7.21**		**4.47**		**2.03**	
$20,501 and over	7.32	1.00	4.45	1.00	2.15	1.00
$16,301 to $20,500	8.50	1.16	4.32	0.97	1.87	0.87
$13,101 to $16,300	7.94	1.08	4.92	1.11	1.78	0.83
$13,100 and under	7.04	0.96	4.47	1.00	2.08	0.97
Income Adjusted	**7.70**		**4.54**		**1.97**	
Black/White Ratio:						
Total		**2.63**		**5.32**		**2.45**
Income Adjusted		**2.79**		**5.39**		**2.32**

Key: AR = rate per 1,000 beneficiaries, adjusted for age and sex; RR = income quartile and Black/White risk ratios.
SOURCES: Data derived from the 1993 Medicare Provider Analysis and Review File, the 1993 Medicare Denominator File, and the 1990 Census of the Population.

Table 8 Selected Changing Procedures per 1,000 Medicare Beneficiaries Age 65 Years and Older, by Zip Code Median Income, 1993

Race and Income	Absorptiometry		Computerized Treatment Planning		EEG Monitoring		Electronic Portal Imaging		Electrotherapy for Chronic Pain		Evoked Potential Monitoring		Signal Averaging ECG	
	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR	AR	RR
All Beneficiaries:	**0.9**		**11.4**		**0.9**		**15.2**		**3.7**		**3.1**		**1.1**	
$20,501 and over	1.4	1.00	12.4	1.00	0.8	1.00	17.2	1.00	2.3	1.00	3.5	1.00	1.4	1.00
$16,301 to $20,500	0.8	0.58	11.7	0.94	0.9	1.03	16.4	0.95	2.8	1.20	3.5	0.99	1.2	0.87
$13,101 to $16,300	0.7	0.49	11.1	0.89	1.0	1.15	15.1	0.88	2.4	1.04	2.7	0.78	1.0	0.74
$13,100 and under	0.8	0.58	10.4	0.83	1.1	1.27	11.9	0.69	7.7	3.39	2.7	0.78	0.9	0.70
White Beneficiaries:														
Total	**0.9**		**11.4**		**0.9**		**15.4**		**3.6**		**3.2**		**1.1**	
$20,501 and over	1.4	1.00	12.4	1.00	0.8	1.00	17.2	1.00	2.3	1.00	3.5	1.00	1.4	1.00
$16,301 to $20,500	0.8	0.58	11.6	0.94	0.9	1.02	16.4	0.95	2.8	1.22	3.5	1.00	1.2	0.87
$13,101 to $16,300	0.7	0.47	11.1	0.89	1.0	1.15	15.2	0.88	2.3	1.03	2.7	0.77	1.0	0.72
$13,100 and under	0.6	0.42	10.1	0.81	1.1	1.35	11.8	0.69	8.3	3.65	2.9	0.83	0.8	0.62
Income Adjusted	**0.9**		**11.4**		**0.9**		**15.1**		**3.9**		**3.2**		**1.1**	
Black Beneficiaries:														
Total	**1.4**		**11.7**		**0.8**		**12.8**		**5.0**		**2.4**		**1.3**	
$20,501 and over	1.3	1.00	12.6	1.00	0.8	1.00	16.0	1.00	2.4	1.00	3.6	1.00	1.5	1.00
$16,301 to $20,500	0.7	0.49	13.9	1.10	1.0	1.19	14.5	0.91	1.2	0.52	2.4	0.67	1.3	0.89
$13,101 to $16,300	1.3	0.98	12.9	1.03	0.8	0.98	13.3	0.84	3.4	1.44	3.3	0.90	1.8	1.20
$13,100 and under	1.5	1.14	11.2	0.89	0.8	1.01	12.3	0.77	6.0	2.54	2.1	0.58	1.3	0.86
Income Adjusted	**1.2**		**12.6**		**0.8**		**13.8**		**3.1**		**2.9**		**1.5**	
Black/White Ratios:														
Total		**1.59**		**1.03**		**0.90**		**0.83**		**1.38**		**0.74**		**1.21**
Income Adjusted		**1.37**		**1.11**		**0.87**		**0.92**		**0.80**		**0.90**		**1.36**

Key: AR = Adjusted for age and sex; RR = Quartile and Black:White risk ratios.

SOURCES: Data derived from the 1993 Medicare Part B Physician/Supplier File, the 1993 Medicare Denominator File, and the 1990 Census of the Population.

Table 9 Medicare Part B Fee-for-Service Claims: Allowed Charges by Type of Service, 1991, 1992, and 1993

Year	Total	Medical Visits and Consultations	Surgery, Rad. Ther., Anesthesia, & Assistants	X-ray and Lab Tests	All Other
			Allowed Charges (in millions)		
1993	$46,124	$16,311	$12,984	$8,962	$7,868
1992	43,942	14,926	13,301	8,785	6,930
1991	42,915	13,885	14,116	8,727	6,186
			Percent Changes		
1992-93	5.0	9.3	-2.4	2.0	13.5
1991-92	2.4	7.5	-5.8	0.7	12.0
			Adjusted for Changed Population		
1992-93	3.5	7.8	-3.8	0.6	12.0
1991-92	0.7	5.7	-7.3	-1.0	10.2

SOURCE: Medicare Part B Monitoring System: Allowed charges derived from Medicare National Claims History File. Population information from June 30 Medicare Part B enrollment files.

Table 10 Medicare Part B Fee-for-Service Claims: Allowed Charges by Type of Service and by Physician/Supplier Specialty Category, 1991, 1992, and 1993

Specialty Category	Year	Total	Medical Visits and Consultations	Surgery, Rad. Ther., Anesthesia, Assistants	X-ray and Lab Tests	All Other
			Allowed Charges in Millions			
Total	**1993**	**$46,124**	**$16,311**	**$12,984**	**$8,962**	**$7,868**
	1992	43,942	14,926	13,301	8,785	6,930
	1991	42,915	13,885	14,116	8,727	6,186
Nonphysician	1993	10,282	258	345	2,506	7,174
	1992	9,088	153	351	2,370	6,214
	1991	8,008	230	361	2,051	5,366
Supplier	1993	6,384	166	38	167	6,012
	1992	5,668	63	20	167	5,418
	1991	5,021	42	12	193	4,774
Facility or lab	1993	3,268	18	15	2,325	910
	1992	2,886	28	51	2,192	615
	1991	2,557	137	103	1,848	469
Practitioner	1993	630	74	292	13	252
	1992	534	62	280	11	181
	1991	430	51	246	10	123
Physician	1993	35,842	16,053	12,639	6,456	694
	1992	34,854	14,773	12,951	6,415	715
	1991	34,906	13,655	13,755	6,676	820
Primary Care Specialties	1993	3,755	2,989	242	462	62
	1992	3,376	2,658	232	459	27
	1991	2,976	2,237	227	479	33
Medical Specialty	1993	13,450	8,667	1,921	2,371	489
	1992	12,616	7,879	1,982	2,233	522
	1991	12,204	7,275	2,123	2,291	515
Surgical Specialty	1993	11,515	3,043	7,794	650	37
	1992	11,491	2,835	7,978	631	47
	1991	11,981	2,620	8,651	605	105
Other Medical Specialty	1993	4,855	166	1,931	2,714	44
	1992	4,960	155	1,973	2,792	40
	1991	4,942	145	1,867	2,875	55
Clinics/Unknown[1]	1993	1,025	525	253	219	28
	1992	1,244	620	329	259	36
	1991	1,680	800	453	378	49
Chiropractors,	1993	1,242	673	495	40	34
Optometrists and	1992	1,167	625	457	42	43
Podiatrists	1991	1,123	577	432	48	66

[1] Includes unknown physician specialties.

SOURCE: Medicare Part B Monitoring System: Allowed charges derived from Medicare National Claims History File.

Table 11 Medicare Part B Fee-for-Service Claims: Allowed Charges and Percent of Total by Physician Specialty Category, 1991, 1992, 1993, and Preliminary 1994

Physician Specialty Category and Year	Allowed Charges	Percent of Total
	(In Millions)	
All Physicians		
1994 preliminary	$36,289	100.0
1993	35,842	100.0
1992	34,854	100.0
1991	34,906	100.0
Primary Care		
1994 preliminary	3,762	10.4
1993	3,755	10.5
1992	3,376	9.7
1991	2,976	8.5
Medical		
1994 preliminary	13,563	37.4
1993	13,450	37.5
1992	12,616	36.2
1991	12,204	35.0
Surgical		
1994 preliminary	11,657	32.1
1993	11,515	32.2
1992	11,491	33.0
1991	11,981	34.3
Other Physician		
1994 preliminary	4,572	12.6
1993	4,855	13.5
1992	4,960	14.2
1991	4,942	14.2
Clinics/Unknown [1]		
1994 preliminary	1,516	4.2
1993	1,025	2.9
1992	1,244	3.6
1991	1,680	4.8
Chiropractors, Optometrists and Podiatrists		
1994 preliminary	1,219	3.4
1993	1,242	3.5
1992	1,167	3.3
1991	1,123	3.2

[1] Includes unknown physician specialties.

NOTE: Preliminary 1994 data are derived from services performed in 1994 and recorded in the Medicare National Claims History File by December 31, 1994. Final totals for 1994 will be developed after June 30, 1995.

SOURCE: HCFA Part B Monitoring System: Allowed charges derived from HCFA National Claims History File.

Table 12 Medicare Part B Fee-for-Service Claims: Allowed Charges for Physician Services by Place of Service, 1991, 1992, 1993, and Preliminary 1994

Place of Service	1991		1992		1993		Preliminary 1994	
	Amount (millions)	Percent	Amount (millions)	Percent	Amount (millions)	Percent	Amount (millions)	Percent
All	**$34,906**	**100.0**	**$34,854**	**100.0**	**$35,842**	**100.0**	**$36,289**	**100.0**
Office	13,677	39.2	13,940	40.0	15,052	42.0	15,634	43.1
Home	158	0.4	146	0.4	138	0.4	453	1.2
Hospital Inpatient	13,986	40.1	13,210	37.9	13,079	36.5	12,455	34.3
HOPD or ER	5,587	16.0	5,465	15.7	5,549	15.5	5,649	15.6
Ambulatory Surgical Center	493	1.4	669	1.9	747	2.1	797	2.2
Nursing Home	518	1.5	677	1.9	755	2.1	808	2.2
All Other	488	1.4	747	2.1	522	1.4	493	1.4

NOTES: HOPD means hospital outpatient department. ER means emergency room.
SOURCE: Data derived from the Medicare Part B Monitoring System: National Claims History File.

Table 13 Medicare Physician Services Covered by the Medicare Fee Schedule, Procedures: 1990 to 1994

Service Category	1990	1991	1992	1993	1994*	1990–1991	1991–1992	1992–1993
	Rate per 1,000 Beneficiaries					Percent Change		
Major Procedure: General								
Breast **	4.1	4.8	4.2	4.0	3.6	18.0	-13.0	-4.4
Colectomy	4.4	4.4	4.4	4.3	3.8	0.3	-0.1	-2.8
Cholecystectomy	4.8	3.8	3.0	2.6	2.1	-21.8	-20.5	-14.5
TURP **	17.7	18.2	16.5	14.3	11.3	2.8	-9.6	-13.1
Hysterectomy **	2.6	3.3	3.4	3.2	2.9	29.0	4.4	-5.4
Disk Surgery	3.6	4.6	4.9	4.8	2.8	28.2	7.1	-2.4
Other	58.5	62.5	64.9	68.0	62.5	6.9	3.7	4.8
Major Procedure: Cardiovascular								
CABG	4.7	5.5	5.9	5.9	4.9	17.4	7.0	-0.4
Aneurysm	1.0	1.2	1.1	1.1	1.0	13.4	-7.6	1.1
Thromboendarterectomy	1.5	2.0	2.2	2.2	2.2	37.2	8.5	-0.8
PTCA	3.8	5.5	6.2	6.6	5.5	45.4	13.7	6.2
Pacemaker	5.9	6.4	6.1	6.1	5.5	8.0	-3.7	0.1
Other	71.8	75.0	86.4	89.9	101.5	4.4	15.1	4.2
Major Procedure: Orthopedic								
Hip Fracture Repair	6.2	6.5	6.6	6.7	6.1	5.2	0.9	2.4
Hip Replacement	3.1	3.6	3.5	3.4	3.2	13.6	-1.8	-1.8
Knee Replacement	3.3	3.8	4.1	4.3	4.2	16.3	9.0	3.3
Other	13.7	15.2	15.6	16.6	14.4	10.6	2.8	6.6

*Data for 1994 are incomplete.

** Breast and hysterectomy rates are based on female enrollment. TURP rates are based on male enrollment.

NOTE: TURP means transluminal resection of prostate, CABG means coronary artery bypass graft, PTCA means percutaneous transluminal coronary angioplasty.

SOURCES: 5 percent BMAD for 1990 and 1991; 1992 and later - Medicare Part B Monitoring System. Medicare Denominator files: 1990 to 1994.

Table 13 Medicare Physician Services Covered by the Medicare Fee Schedule, Procedures: 1990 to 1994 (Continued)

Service Category	1990	1991	1992	1993	1994*	1990–1991	1991–1992	1992–1993
	Rate per 1,000 Beneficiaries					Percent Change		
Major Procedure: Eye								
Corneal Transplant	0.7	0.8	0.7	0.7	0.6	19.8	-14.0	-4.3
Cat Rem/Lens Insert	36.1	46.7	45.8	42.1	41.8	29.3	-2.0	-8.2
Retinal Detachment	1.9	2.0	1.9	1.9	1.7	7.1	-6.3	-1.5
Treatm Retinal Lesions	7.4	9.0	8.2	8.6	8.4	20.4	-8.1	4.3
Other	35.7	45.7	42.2	42.5	40.6	28.0	-7.7	0.8
Ambulatory Procedures:								
Skin	112	130	110	105	95	15.6	-15.2	-4.7
Musculoskeletal	22	25	22	22	20	17.8	-14.1	-0.9
Hernia Repair	5	6	6	6	4	14.1	-3.0	-0.4
Lithotripsy	1	1	1	1	1	-8.1	1.8	6.0
Other	74	86	86	90	80	15.6	0.4	4.0
Minor Procedures:								
Skin	687	775	867	885	472	12.8	11.9	2.0
Musculoskeletal	142	158	147	154	149	11.4	-6.9	4.6
Other	536	661	669	690	690	23.4	1.2	3.2
Oncology								
Radiation Therapy	136	185	269	265	235	36.0	45.7	-1.7
Other	85	98	99	117	122	15.6	0.5	18.5

*Data for 1994 are incomplete.

** Breast and hysterectomy rates are based on female enrollment. TURP rates are based on male enrollment.

NOTE: TURP means transluminal resection of prostate, CABG means coronary artery bypass graft, PTCA means percutaneous transluminal coronary angioplasty.

SOURCES: 5 percent BMAD for 1990 and 1991; 1992 and later - Medicare Part B Monitoring System. Medicare Denominator files: 1990 to 1994.

Table 13 Medicare Physician Services Covered by the Medicare Fee Schedule, Procedures: 1990 to 1994 (Continued)

Service Category	1990	1991	1992	1993	1994*	1990–1991	1991–1992	1992–1993
	Rate per 1,000 Beneficiaries					Percent Change		
Endoscopy								
Arthroscopy	2.7	3.5	3.8	4.1	4.1	28.6	8.6	7.9
Upper GI Endoscopy	37.7	44.4	45.5	46.8	45.6	17.7	2.6	2.8
Sigmoidoscopy	42.9	43.5	39.2	35.7	31.1	1.5	-10.0	-8.9
Colonoscopy	32.6	40.0	42.1	43.8	42.5	22.5	5.3	4.0
Cystoscopy	39.3	43.7	42.8	43.2	40.3	11.4	-2.1	0.9
Broncoscopy	8.7	9.8	9.5	9.3	8.3	12.8	-3.9	-2.1
Laparoscopic Cholecystectomy	0.1	2.9	3.9	4.1	3.9	2,091.3	35.4	4.5
Laryngoscopy	8.1	9.2	9.4	9.6	9.5	12.4	2.4	2.7
Other	12.9	15.2	15.8	16.4	16.6	17.6	3.9	4.0
Dialysis	32	37	41	43	39	14.6	11.7	3.6
Tests								
Other	90	84	130	143	130	-6.7	54.5	9.7
Electrocardiograms	1,022	1,093	365	377	927	7.0	-66.6	3.4
Cardiovascular Stress Tests	43	51	56	60	71	19.5	10.7	6.1
EKG Monitoring	45	48	54	49	42	5.3	12.0	-9.0
Anesthesia	**6,133**	**16,003**	**265**	**266**	**250**	**161.0**	**-98.3**	**0.5**

*Data for 1994 are incomplete.

** Breast and hsyterectomy rates are based on female enrollment. TURP rates are based on male enrollment.

NOTE: TURP means transluminal resection of prostate, CABG means coronary artery bypass graft, PTCA means percutaneous transluminal coronary angioplasty.

SOURCES: 5 percent BMAD for 1990 and 1991; 1992 and later - Medicare Part B Monitoring System. Medicare Denominator files: 1990 to 1994.

Table 14 Visits and Consultations by Vulnerable Population Groups: 1991–1992

Vulnerable Population	Outpatient Visits		ER Visits		Nursing Home Visits		Consultations	
	1991	1992	1991	1992	1991	1992	1991	1992
	Age-Sex Adjusted Visits per Beneficiary							
Shortage Areas								
All Shortage Combined	4.72[a]	4.78[ab]	0.38[a]	0.34[ab]	0.30	0.33[a]	0.41[a]	0.56[b]
Urban	4.91[a]	4.96[ab]	0.42[a]	0.38[ab]	0.34[a]	0.37[ab]	0.49[a]	0.67[ab]
Rural	4.43[a]	4.49[ab]	0.32[a]	0.28[ab]	0.25[a]	0.25[a]	0.28[a]	0.40[ab]
Non-Shortage	5.12	5.23[b]	0.31	0.30[b]	0.31	0.34[b]	0.40	0.56[b]
Poor Areas								
All Poor Combined	5.07[a]	5.11[ab]	0.41[a]	0.37[ab]	0.38[a]	0.42[ab]	0.48[a]	0.67[ab]
Urban	5.12	5.17[ab]	0.42[a]	0.37[ab]	0.41[a]	0.46[ab]	0.54[a]	0.74[ab]
Rural	4.89[a]	4.89[a]	0.37[a]	0.36[ab]	0.26[a]	0.20[ab]	0.27[a]	0.40[ab]
Non Poor	5.10	5.21[b]	0.31	0.30[b]	0.31	0.33[b]	0.40	0.55[b]
Race								
Black	4.67[a]	4.75[ab]	0.47[a]	0.45[ab]	0.37[a]	0.42[ab]	0.45[a]	0.63[ab]
White	5.21	5.30[b]	0.31	0.29[b]	0.32	0.34[b]	0.41	0.56[b]
Medicaid Eligible								
Yes	5.71[a]	5.67[a]	0.69[a]	0.68[ab]	1.51[a]	1.58[ab]	0.59[a]	0.82[ab]
No	5.03	5.15[b]	0.28	0.26[b]	0.18	0.20[b]	0.38	0.53[b]
Disabled								
Yes	5.43[a]	5.52[ab]	0.57[a]	0.56[ab]	0.55[a]	0.62[ab]	0.56[a]	0.79[ab]
No	5.06	5.17[b]	0.29	0.28[b]	0.29	0.31[b]	0.39	0.54[b]
Age								
85 years and older	4.26[a]	4.36[ab]	0.53[a]	0.53[a]	2.26[a]	2.43[ab]	0.51[a]	0.72[ab]
Less than 85 years	5.12	5.23[b]	0.31	0.30[b]	0.26	0.28[b]	0.40	0.56[b]
Area of Residence								
Rural	4.72[a]	4.81[ab]	0.32	0.31[ab]	0.28[a]	0.30[ab]	0.29[a]	0.41[ab]
Urban	5.25	5.36[b]	0.32	0.30[b]	0.32	0.35[b]	0.45	0.62[b]
All Beneficiaries	**5.10**	**5.20[b]**	**0.32**	**0.30[b]**	**0.31**	**0.34[b]**	**0.40**	**0.56[b]**

KEY: ER = emergency room.

[a] Significantly different from the comparison group at the 0.05 level.

[b] Significantly different from 1991 to 1992 at the 0.05 level.

SOURCE: Data derived from Medicare Part B claims for a sample of beneficiaries, Medicare Denominator Files.

Table 15 Percent of Persons With a Physician Visit and Mean Number of Visits per Person, by Selected Sociodemographic Characteristics: 1984, 1986, 1989, 1990, 1991, and 1992

Sociodemographic characteristics	Percent distribution of persons	Percent with a physician visit						Mean number of visits per person					
	1992	1984	1986	1989	1990	1991	1992	1984	1986	1989	1990	1991	1992
Health Insurance status													
65 years and older[1]	**100.0**	**82**	**83**	**85**	**86**	**86**	**87**	**8.2**	**9.1**	**8.9**	**9.2**	**10.4**	**10.6**
Medicare only	14.6	76	73	79	78	79	81	7.6	8.3	7.5	8.1	8.7	9.5
Medicare and other public program	7.3	89	86	90	88	89	90	11.9	14.0	13.1	14.1	17.1	17.6
Medicare and other coverage	69.1	84	85	87	87	87	89	8.3	8.9	8.8	8.9	10.2	10.3
18–64 years[2]	**100.0**	**70**	**71**	**72**	**73**	**73**	**72**	**4.9**	**5.2**	**5.2**	**5.4**	**5.4**	**5.7**
Public program	7.0	84	83	85	85	83	85	10.1	11.9	11.1	11.1	11.2	13.7
Insured but not public program	69.9	72	73	75	75	75	76	4.7	5.0	5.1	5.2	5.2	5.5
Uninsured	18.2	57	57	57	60	60	57	3.7	3.6	3.2	4.0	3.7	3.6
Income Level													
65 years and older	**100.0**	**82**	**83**	**85**	**86**	**86**	**87**	**8.2**	**9.1**	**8.9**	**9.2**	**10.4**	**10.6**
Poor/Low income	44.1	81	81	84	84	84	85	8.4	9.3	9.1	9.7	10.9	11.1
Not poor	55.9	82	84	86	87	87	88	8.1	8.9	8.7	8.8	10.1	10.2
18–64 years	**100.0**	**70**	**71**	**72**	**73**	**73**	**72**	**4.9**	**5.2**	**5.2**	**5.4**	**5.4**	**5.7**
Poor/Low income	31.8	67	68	69	70	70	68	5.1	5.7	5.4	5.9	5.7	6.3
Not poor	68.2	72	72	73	74	74	74	4.8	5.0	5.1	5.2	5.2	5.5

[1] Includes persons with insurance other than Medicare and unknown insurance.

[2] Includes persons with unknown insurance.

SOURCE: Data derived from the National Health Interview Survey, National Center for Health Statistics, 1984–1992.

Table 16 Utilization, Access and Satisfaction Indicators, by Age: 1991–1993

	Disabled Under Age 65			Elderly Age 65 and Older		
	1991	1992	1993	1991	1992	1993
Type of Regular Source						
Physician's office	57.0%	58.4%*	60.6%*	67.5%	69.9%[b]	72.4%[ac]
Other place with regular physician	24.4%	19.9%	19.3%	19.4%	16.9%	16.0%[a]
Other place with no regular physician	9.6%	9.3%*	8.7%*	4.0%	3.6%	3.5%
None	9.1%	12.4%	11.3%	9.2%	9.6%	8.1%
Physician Use						
Percent with:						
Physician visit (any setting)	85.9%	89.1%[b]	88.2%*	86.1%	90.1%[b]	91.4%[ac]
Physician visit in non-hospital setting	81.0%*	82.0%*	81.9%*	83.5%	87.2%[b]	88.8%[ac]
Outpatient department visit	32.7%*	40.8%[b]*	36.5%[ac]	25.9%	36.8%[b]	35.9%[a]
Emergency room visit	27.8%*	33.1%[b]*	28.6%[c]*	16.1%	19.8%[b]	20.3%[a]
Average Number of Visits per User:						
Total	6.2	6.8	6.5	6.1	6.6[b]	6.6[a]
To primary care physician	4.7	4.6	4.6	4.6	4.7	4.7
To medical specialist	3.5*	4.1*	4.0	3.0	3.2	3.5[a]
To other specialist	3.7*	3.9*	3.5*	3.1	3.1	3.1
To non-physician	2.2	2.2	2.3	2.1	2.1	2.0
Hospital Use						
Percent with hospitalization	16.9%*	16.5%*	17.1%	13.4%	13.8%	16.4%[ac]
Percent with ACS condition	3.9%*	4.2%*	4.7%	2.8%	3.0%	5.6%[ac]
Barriers to Care						
Percent reporting a health problem and not receiving care	22.6%*	19.9%*	17.1%[a]*	8.2%	7.0%[b]	6.3%[a]
Of those, percent reporting a financial barrier	67.7%*	66.5%*	71.4%*	48.7%	53.4%	44.2%[c]
Satisfaction with Care						
Percent satisfied with:						
Quality of medical care	88.9%*	92.2%[b]*	92.6%[a]*	95.2%	96.4%[b]	96.3%[a]
Availability of medical care	82.3%*	88.6%[b]*	88.5%[a]*	89.1%	93.4%[b]	94.8%[ac]
Ease of getting to doctor	84.1%*	88.7%[b]*	89.5%[a]*	93.7%	94.4%	94.6%[a]
Costs of medical care	61.6%*	69.9%[b]*	73.8%[ac]*	72.0%	80.8%[b]	83.8%[ac]

* Significantly different from those aged 65 and older ($p<0.05$).

[a] Significantly different between 1991 and 1993.

[b] Significantly different between 1991 and 1992.

[c] Significantly different between 1992 and 1993.

NOTE: Age-adjusted using the direct method of standardization.

SOURCE: Data derived from Medicare Current Beneficiary Survey, Rounds 1,4, and 7 Data; Medicare NCH Claims for MCBS Population.

Table 17 Covered Preventive Service Use for Vulnerable Population Groups: 1991–1992

Vulnerable Population	Mammography		Pneumococcal Pneumonia Immunization	
	1991	1992	1991	1992
	Age-Sex Adjusted Tests per 1,000 Beneficiaries			
Shortage Areas				
All Shortage Combined	240.1[a]	245.5[ab]	54.3[a]	42.4[b]
Urban	231.2[a]	235.7[a]	61.1[a]	46.6
Rural	254.9[a]	261.7[ab]	43.3	35.9
Non-Shortage	281.3	284.9	38.1	39.3
Poor Areas				
All Poor Combined	215.3[a]	222.2[ab]	19.5[a]	14.7[ab]
Urban	221.4[a]	226.7[ab]	19.0[a]	14.2[a]
Rural	191.6[a]	205.2[ab]	21.6[a]	16.2[ab]
Non- Poor	284.3	287.6	40.5	38.4
Races				
Black	195.0[a]	203.0[ab]	27.5[a]	21.3[ab]
White	293.0	294.3	40.7	39.2
Medicaid Eligible				
Yes	156.6[a]	163.0[ab]	20.9[a]	17.8[a]
No	294.9	298.4	40.9	38.7
Disabled				
Yes	225.4[a]	232.6[ab]	29.6[a]	24.9[a]
No	283.1	286.5	40.0	37.9
Age				
85 Years and over	64.1[a]	66.4[a]	23.7[a]	24.4[a]
Under 85 Years	287.2	291.3	39.3	37.0
Area of Residence				
Rural	252.0[a]	257.9[ab]	34.7	30.9
Urban	289.3	292.2	40.6	38.9
All Beneficiaries	**279.1**	**282.8**	**38.9**	**36.7**

[a] Significantly different from the comparison group at the 0.05 level.

[b] Significantly different from 1991 to 1992 at the 0.05 level.

NOTE: Rates for mammagraphy are age-adjusted for female enrollees only.

SOURCE: Data derived from Medicare Part B claims for a sample of beneficiaries and Medicare Denominator Files.

Table 18 Ambulatory Care Sensitive (ACS) Hospital Admission Rates by Vulnerable Population Groups: 1991–1993

Vulnerable Population	1991	1992	1993
	Age-Sex Adjusted Admissions Per 1,000 Beneficiaries		
Shortage Areas			
All Shortage Combined	71.8[a]	73.1[a]	77.1[ab]
Urban	77.7[a]	79.7[a]	83.6[ab]
Rural	62.5	62.6	66.9[ab]
Non-Shortage	60.8	61.0	63.5[b]
Poor Areas			
All Poor Combined	79.1[a]	80.2[a]	85.3[ab]
Urban	76.6[a]	77.8[a]	82.6[ab]
Rural	88.2[a]	88.8[a]	94.9[ab]
Non-Poor	59.9	60.2	62.2[b]
Race			
Black	84.2[a]	86.1[a]	89.8[ab]
White	59.8	59.9	62.4[b]
Medicaid Eligible			
Yes	136.1[a]	136.7[a]	141.3[ab]
No	53.2	53.3	55.2[b]
Disabled			
Yes	110.7[a]	112.9[a]	115.5[ab]
No	55.8	55.7	58.3[b]
Age			
85 Years and older	130.3[a]	131.6[a]	132.8[ab]
Under 85 Years	59.5	59.6	62.0[b]
Area of Residence			
Rural	68.0[a]	68.5[a]	71.1[ab]
Urban	58.0	59.0	61.5[b]
All Beneficiaries	**61.4**	**61.6**	**64.2[b]**

[a] Significantly different from the comparison group at the 0.05 level.

[b] Significantly different from 1991 to 1993 at the 0.05 level.

SOURCE: Data derived from Medicare Part A claims for a sample of beneficiaries and Medicare Denominator Files.

Table 19 Comparison of Age-adjusted Rates of Selected Procedures in Elderly Black and White Medicare Beneficiaries, and 30-Day Post-Admission Death Rates: 1990 and 1993

	Procedure rate							30-day post-admission death rate				
	1990			1993			Change in rate, 1990-93 (Percent)	1990		1993		Change in rate, 1990-93 (Percent)
	Number	Rate/* 1,000	Black/ White ratio	Number	Rate/* 1,000	Black/ White ratio		Rate/** 1,000	Black/ White ratio	Rate/** 1,000	Black/ White ratio	
Heart and Vascular Procedures												
Cardiac catheterization												
White	334,039	13.82	0.65	407,169	16.05	0.71	16.14	na	na	na	na	na
Black	18,689	8.97		24,198	11.32		26.20	na	na	na	na	na
Percutaneous transluminal coronary angioplasty												
White	88,594	3.56	0.40	134,083	5.29	0.46	48.60	23.88	1.16	25.70	1.05	7.62
Black	2,942	1.41		5,215	2.44		73.05	27.59		27.05		-1.96
Coronary artery bypass graft												
White	90,749	3.64	0.37	118,217	4.67	0.41	28.30	32.87	1.28	39.92	1.09	21.45
Black	2,792	1.34		4,041	1.90		41.79	42.11		43.40		3.06
Carotid endarterectomy												
White	43,314	1.73	0.30	59,502	2.33	0.31	34.68	18.54	1.28	15.93	0.90	-14.08
Black	1,090	0.52		1,550	0.72		38.46	23.66		14.29		-39.60
Orthopedic and Back Procedures												
Reduction of fracture of femur												
White	121,773	4.76	0.42	133,815	4.97	0.45	4.41	58.28	0.78	59.36	0.82	1.85
Black	4,343	2.02		5,107	2.25		11.39	45.71		48.92		7.02
Other arthroplasty of hip												
White	62,945	2.46	0.47	72,701	2.71	0.46	10.16	55.88	0.95	58.68	0.79	5.01
Black	2,474	1.15		2,826	1.25		8.70	53.35		46.58		-12.69
Total knee replacement												
White	80,990	3.24	0.62	108,742	4.28	0.64	32.10	5.52	1.59	4.35	1.25	-21.20
Black	4,256	2.02		5,917	2.72		34.65	8.75		5.44		-37.83
Total hip replacement												
White	63,260	2.52	0.45	67,134	2.62	0.48	3.97	14.71	1.05	12.02	1.64	-18.29
Black	2,408	1.14		2,755	1.27		11.40	15.42		19.73		27.95
Laminectomy												
White	33,852	1.36	0.54	38,738	1.53	0.52	12.50	11.75	1.58	9.43	1.54	-19.74
Black	1,536	0.74		1,706	0.80		8.11	18.53		14.49		-21.80
Excision of disk												
White	30,589	1.23	0.50	33,974	1.35	0.49	9.76	6.38	2.43	6.51	1.42	2.04
Black	1,289	0.62		1,401	0.66		6.45	15.48		9.26		-40.18
Spinal fusion												
White	11,387	0.46	0.61	17,435	0.70	0.59	52.17	18.87	1.11	17.73	1.04	-6.04
Black	581	0.28		870	0.41		46.43	20.99		18.41		-12.29
Other Procedures												
Prostatectomy												
White	226,416	22.41	0.91	176,706	17.00	1.04	-24.14	9.59	1.18	9.83	1.34	2.50
Black	16,911	20.44		14,858	17.71		-13.36	11.31		13.16		16.36
Cholecystectomy												
White	131,430	5.25	0.62	136,217	5.32	0.69	1.33	29.87	1.33	28.94	1.42	-3.11
Black	6,919	3.28		8,055	3.69		12.50	39.77		41.20		3.60
Repair of inguinal hernia												
White	59,174	2.34	0.72	34,968	1.33	0.88	-43.16	13.75	1.53	20.51	0.98	49.16
Black	3,489	1.68		2,510	1.17		-30.36	21.10		20.13		-4.60
Mastectomy												
White	54,284	3.61	0.75	47,102	3.09	0.82	-14.40	5.22	1.54	4.48	1.79	-14.18
Black	3,491	2.72		3,376	2.53		-6.99	8.03		8.00		-0.37
Hysterectomy												
White	51,258	3.46	0.63	52,324	3.50	0.67	1.16	7.40	2.22	7.36	1.34	-0.54
Black	2,779	2.19		3,069	2.33		6.39	16.41		9.85		-39.98
Appendectomy												
White	11,157	0.45	0.73	11,563	0.45	0.78	0.00	27.39	1.75	28.69	1.67	4.75
Black	691	0.33		764	0.35		6.06	47.84		47.91		0.15
Incidental Appendectomy												
White	10,635	0.43	0.84	11,043	0.43	0.93	0.00	30.74	1.46	39.05	1.13	27.03
Black	747	0.36		862	0.40		11.11	44.77		44.11		-1.47

* per 1,000 enrollees. ** per 1,000 discharges.

SOURCE: Data from the Medicare Provider Analysis and Review files and Medicare Denominator Files.

Table 20 Percent of Stroke Patients Receiving Selected Diagnostic Tests and Procedures During the Initial Hospital Stay, 1991 and 1992

	Noninvasive Cerebrovascular Tets		Cerebral Angioplasty		Head CT Scans		Brain MRI Scans	
Vulnerable Population	1991	1992	1991	1992	1991	1992	1991	1992
Shortage Areas								
All Shortage Combined	35.0%	39.5%	5.3%	6.4%	74.7%	74.2%	10.7%	14.2%[b]
Urban	39.4	43.3	5.6	6.4	78.8	78.4	12.2	16.5
Rural	26.6[a]	32.4[a]	4.8	6.3	66.8[a]	66.5[a]	7.9[a]	9.9[a]
Non-Shortage	36.5	42.9[b]	6.7	6.4	75.4	74.8	11.7	14.8
Poor Areas								
All Poor Combined	35.1	40.0[b]	5.6	5.1	76.5	75.9	11.9	16.0[b]
Urban	37.3	42.2	5.4	4.7	78.9	78.3	12.9	17.4
Rural	27.5[a]	32.8[ab]	6.5	6.2	68.3[a]	68.2[a]	8.4[a]	11.2[b]
Non Poor	36.6	43.0[b]	6.7	6.5	75.2	74.6	11.6	14.6
Race								
Black	34.8	39.8[b]	4.1[a]	3.5[a]	77.5	75.3	11.4	16.6[b]
White	36.7	43.3[b]	7.0	6.7	75.1	74.8	11.4	14.4
Medicaid Eligible								
Yes	28.9[a]	33.3[a]	3.3[a]	3.4[a]	74.7	73.9	9.0	11.3[a]
No	38.2	44.9[b]	7.4	7.0	75.5	74.9	12.2	15.5
Disabled								
Yes	37.2	44.1[b]	8.3	8.4	74.0	73.5	12.5	16.4
No	36.3	42.5[b]	6.4	6.1	75.5	74.9	11.5	14.5
Age								
85+ Years	24.2[a]	31.0[ab]	1.2[a]	1.3[a]	74.9	73.6	5.7[a]	7.3[a]
Less than 85	39.2	45.5[b]	7.9	7.5	75.4	75.0	12.9	16.5
Area of Residence								
Rural	28.7[a]	34.9[ab]	6.1	5.7	72.6	70.6[a]	8.8[a]	10.8[a]
Urban	39.5	46.0	6.9	6.6	76.4	76.4	12.7	16.4
All Patients	**36.4**	**42.7[b]**	**6.6**	**6.4**	**75.3**	**74.7**	**11.6**	**14.7**

[a] Significantly different from the comparison group at the 0.05 level.

[b] Significantly different from 1991 to 1992 at the 0.05 level.

SOURCE: Data derived from Medicare Part A and Part B claims for a sample of beneficiaries.

Table 21 Mean Caseload per Physician, Change and Percent Change in Mean and Median, by Specialty Group: 1992–1993

Specialty[a]		1992 Mean Caseload[b]	1993 Mean Caseload[b]	1992–1993 Change in Mean Caseload	1992–1993 Percent Change in Mean Caseload	1993 Median Caseload[c]	1992–1993 Percent Change in Median Caseload
Primary Care		**263**	**275**	**12****	**5**	**198**	**6**
	Family Practice	277	291	14**	5	219	3
	General Practice	266	275	8	3	188	4
Psychiatry		**66**	**68**	**2**	**2**	**29**	**7**
Medical Specialties		**350**	**364**	**14****	**4**	**299**	**2**
	Cardiology	501	524	23*	5	477	2
	Internal Medicine	333	350	17**	5	291	6
RAP[d]		**766**	**806**	**40***	**5**	**341**	**13**
	Anesthesiology	230	237	7	3	192	5
	Radiology	1,385	1,455	70	5	1,210	17
Surgery		**298**	**304**	**6**	**2**	**170**	**3**
	General Surgery	229	235	6	3	207	4
	Obstetrics/Gynecology	70	76	6**	8	51	13
	Ophthalmology	764	747	-17	-2	593	-3
	Orthopedic Surgery	247	250	3	1	227	-1
	Otolaryngology	318	315	-2	-1	259	-10
	Podiatry Surgery	394	403	9	2	294	-11
	Urology	472	487	15	3	477	7
LLP[e]		**86**	**86**	**0**	**0**	**40**	**1**
	Chiropractic	43	43	0	1	29	0
	Optometry	155	154	-1	-1	86	5

[a] Data from the six broad specialty groups may include physicians in detailed specialties not shown.

[b] Means weighted based on estimated Medicare physician populations of the 36 States.

[c] Median based on a self-weighting 2% sample from the 36 States.

[d] Subtotal for radiology, anesthesiology, and pathology.

[e] LLP = Limited license practitioners. Oral surgeons and podiatrists are also LLPs but included with surgeons for this analysis.

*Statistically significant at 0.05 level.

**Statistically significant at 0.01 level.

SOURCE: Data derived from the Medicare Part B Monitoring System: National Claims History Physician Sample File.

Table 22 Mean Allowed Charges per Physician, Change and Percent Change in Mean and Median, by Specialty Group: 1992–1993

Specialty[a]		1992 Mean Allowed Charges[b]	1993 Mean Allowed Charges[b]	1992–1993 Mean Allowed Charges Change	1992-1993 Percent Change in Mean	1993 Median Allowed Charges[c]	1992–1993 Percent Change in Median
Primary Care		**$40,123**	**$41,294**	**$1,171**	**3**	**$23,760**	**18**
	Family Practice	45,995	47,260	1,265	3	27,027	2
	General Practice	42,664	43,540	876	2	26,149	18
Psychiatry		**25,425**	**24,238**	**-1,187**	**-5**	**27,027**	**21**
Medical Specialties		**103,081**	**110,721**	**7,640****	**7**	**70,288**	**4**
	Cardiology	168,979	180,460	11,481*	7	14S,077	4
	Internal Medicine	85,617	9S,18S	9,S68	11	61,4S9	10
RAP[d]		**85,308**	**86,034**	**727**	**1**	**54,551**	**3**
	Anesthesiology	S0,269	50,304	34	0	43,366	-1
	Radiology	118,659	117,438	1,221	-1	81,169	9
Surgery		**85,058**	**85,719**	**660**	**1**	**40,523**	**4**
	General Surgery	77,020	78,396	1,375	2	61,4S6	7
	Obstetrics/Gynecology	10,723	10,911	188	2	6,056	7
	Ophthalmology	230,816	220,77S	-10,041	-4	1S2,107	2
	Orthopedic Surgery	94,172	94,191	19	0	77,771	1
	Otolarynology	50,292	49,946	-347	-1	38,0S3	-8
	Podiatry Surgery	50,372	54,117	3,74S	7	41,771	7
	Urology	1S4,231	1S9,9S7	5,726	4	144,S22	8
LLP[e]		**8,063**	**8,061**	**-2**	**0**	**4,286**	**2**
	Chiropractic	6,354	6,522	168	3	4,266	7
	Optometry	10,766	10,462	-30S	-3	4,340	-9

[a] Data from the six broad specialty groups may include physicians in detailed specialties not shown.

[b] Means weighted based on estimated Medicare physician populations of the 36 States.

[c] Median based on a self-weighting 2% sample from the 36 States.

[d] Subtotal for radiology, anesthesiology, and pathology.

[e] LLP = Limited license practitioners. Oral surgeons and podiatrists are also LLPs but included with surgeons for this analysis.

*Statistically significant at 0.05 level.

**Statistically significant at 0.01 level.

SOURCE: Data derived from the Medicare Part B Monitoring System: National Claims History Physician Sample File.

Table 23 Medical Specialists per 100,000 Medicare Beneficiaries, by Region, United States: 1984–1993

Region	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	Average Annual Percent Change 1984–1992	Average Annual Percent Change 1992–1993
U.S. Total	839	848	856	873	899	914	918	934	950	952	1.58	0.21
Region												
Northeast	954	967	982	1,017	1,057	1,082	1,092	1,124	1,153	1,167	2.40	1.20
Midwest	751	757	764	773	793	805	804	821	836	845	1.35	1.10
South	719	731	743	763	785	795	799	811	824	820	1.72	-0.45
West	1,048	1,052	1,045	1,044	1,069	1,087	1,091	1,096	1,105	1,094	0.67	-0.95
Metropolitan Areas	992	1,002	1,012	1,034	1,065	1,083	1,089	1,110	1,132	1,135	1.67	0.20
Large Metropolitan Core	1,161	1,173	1,186	1,217	1,258	1,281	1,289	1,320	1,352	1,356	1.92	0.31
Large Metropolitan Fringe	589	599	609	628	646	659	661	671	680	695	1.79	2.31
Medium Metropolitan	823	831	839	854	876	890	895	907	920	920	1.40	-0.03
Lesser Metropolitan	768	777	781	788	806	823	826	840	855	858	1.35	0.32
Nonmetropolitan Areas	380	385	388	386	394	398	394	392	389	387	0.31	-0.64
Urbanized Adjacent	485	489	492	485	497	503	499	496	492	493	0.16	0.22
Urbanized Nonadjacent	646	655	659	661	675	684	682	686	690	691	0.82	0.10
Less Urban Adjacent	322	327	332	330	334	340	334	331	328	323	0.21	-1.50
Less Urban Nonadjacent	359	363	363	360	367	369	366	362	357	355	-0.07	-0.67
Thinly Populated Adjacent	212	216	219	223	229	224	218	215	211	203	-0.07	-3.69
Thinly Populated Nonadjacent	220	224	227	223	228	226	221	217	212	207	-0.47	-2.41
Ex-Ante Impact Group												
Increase	800	806	804	816	834	849	854	865	874	896	1.12	0.22
No Change	740	752	763	783	808	826	834	850	865	873	1.96	0.95
Moderate Decrease	856	866	876	896	925	939	942	966	989	997	1.82	0.80
Large Decrease	924	932	939	949	974	989	990	998	1,009	997	1.11	-1.15

NOTES: Ex Ante Impact Group refers to areas grouped according to expected changes in Medicare physician payment under physician payment reform, as published in the Federal Register 56:227. See References, Appendix I.
Metropolitan and nonmetroplitan areas are based upon 1990 census classifications.
SOURCE: Data derived from Area Resource Files and Medicare Denominator Files.

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